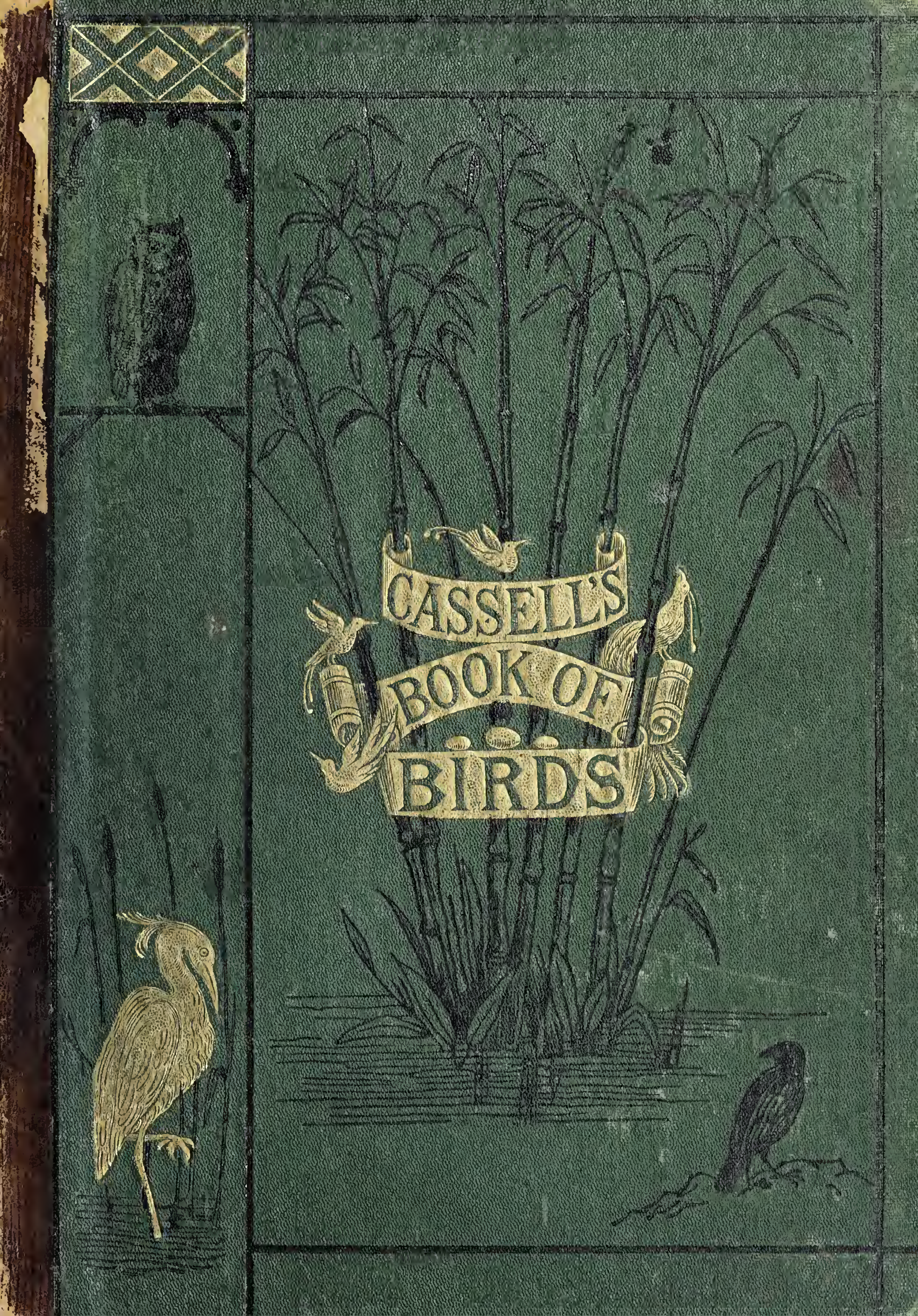

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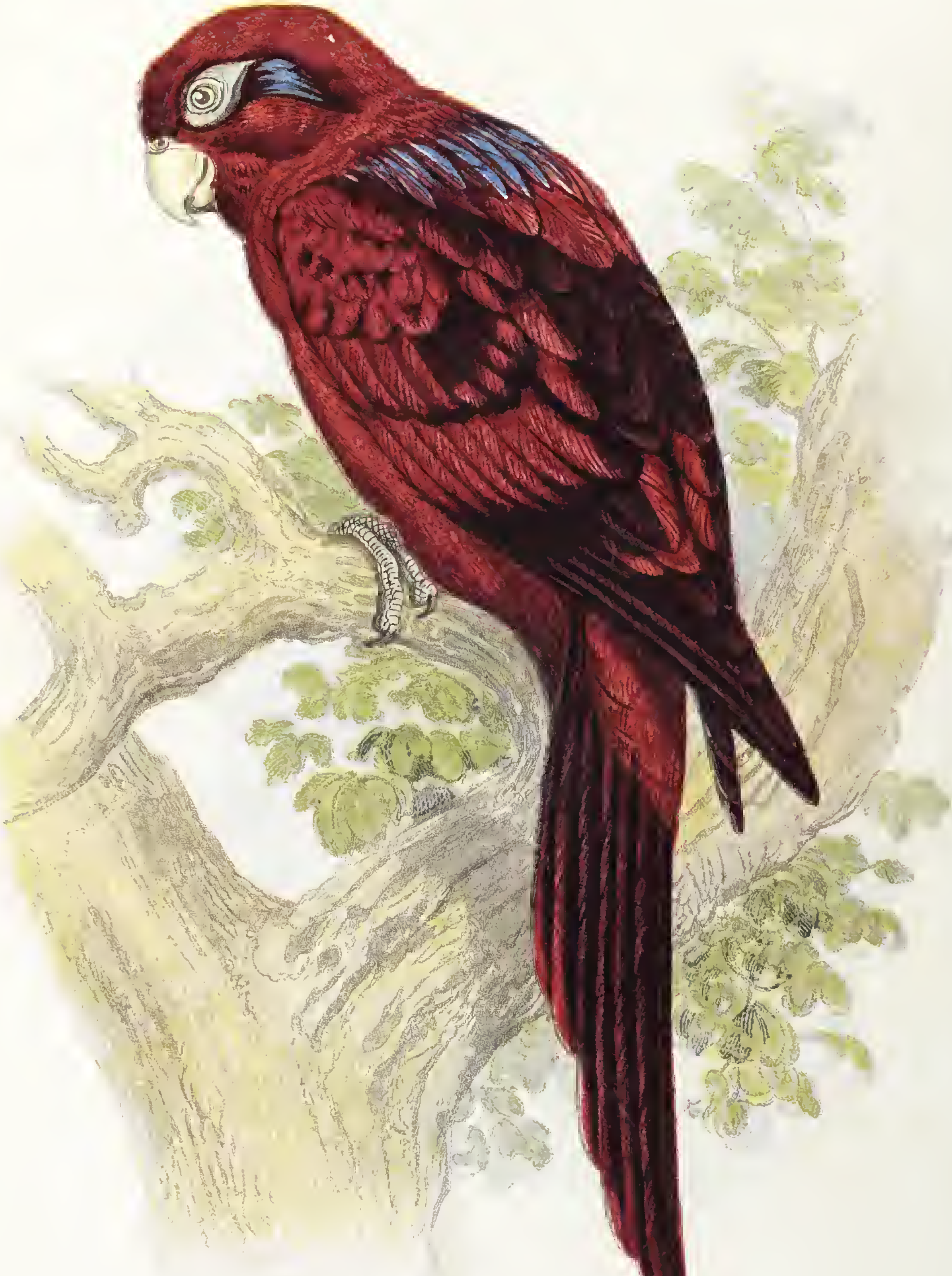

THE BLUE-STRIPED LORY — LORIUS CYANOSTRIATUS

(about four-fifths [illegible] size)

Zool
Aves
B.

Brehm, Alfred Edmund

CASSELL'S

BOOK OF BIRDS.

[Tr.] *FROM THE TEXT OF DR. BREHM.*

[edited]

BY

THOMAS RYMER JONES, F.R.S.,

PROFESSOR OF NATURAL HISTORY AND COMPARATIVE ANATOMY IN KING'S COLLEGE, LONDON.

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CONTENTS.

PAGE

EDITOR'S INTRODUCTION 1–22

CLASSIFICATION OF BIRDS 23

CRACKERS (*Enucleatores*).

Parrots (*Psittacini*). The True Parrot (*Psittacinæ*) :—The Jako—The Amazon Parrot—The Maitakka—The Crested Hawk Parrot 24–43

The Dwarf Parrots (*Psittacula*) :—Swinder's Love Bird—The Sparrow Parrot—The Siskin Parrot . . 43–45

Cockatoos (*Plyctolophus*) :—The Lemon-crested Cockatoo—Leadbeater's Cockatoo—The Helmet Cockatoo—The Nose Cockatoo—The Nestor Cockatoo—The Eagle Cockatoo—The Casmalos—Banks's Raven Cockatoo—The Kakapo, or Night Parrot of New Zealand 45–57

The Araras (*Aræ*):—The Scarlet Macaw—The Soldier Arara—The Anakan—The Ararauna—The Hyacinth-coloured Arara. The Parrakeets, or Conical-tailed Parrots (*Conurus*):—The Garuba—The Tiriba—The Carolina Parrakeet—The Choroy 58–66

The Long-tailed Parrots, or Parrakeets (*Palæornithes*) :—The Collared, or Rose-ringed Parrot—The Bettet. The Superb Parrots (*Polytelis*) :—The Scarlet-crested Superb Parrot—The Black-tailed Superb Parrot. The Grass Parrots (*Platycerci*) :—The Rosella—The Variegated Parrot—The Waved Parrot—The Corella—The Ground Parrakeet 66–79

The Lories (*Lorii*) :—The Purple-capped Lory—The Dappled Lorikeet—Swainson's Lorikeet—The Maiden Lorikeet—The Papuan Lory—The Blue-striped Lory 79–82

PASSERINE BIRDS (*Passeres*).

The Cross-bills (*Loxiæ*) :—The Large-beaked Cross-bill—The Pine-tree Cross-bill—The Banded Cross-bill—The Parrot Greenfinch 85–92

The Bullfinches (*Pyrrhulæ*) :—The Parrot Bullfinch—The Pine Grosbeak—The Carmine Grosbeak—The Rose Bullfinch—The Carmine Bullfinch—The Siberian Bullfinch—The Vinous Grosbeak, or Desert Trumpeter—The Bullfinch—The Girlitz—The Canary 92–114

The Finches (*Fringillæ*) :—The Chaffinch—The Mountain Finch—The Snow Finch—The Winter Finch. The Linnets (*Cannabinæ*) —The Brown Linnet—The Mountain or Grey Linnet—The Birch-tree Siskin—The Common Siskin—The Goldfinch—The Golden Thistle Finch 114–130

The Sparrows Proper (*Passeres*) :—The Common Sparrow—The Spanish Sparrow—The Field or Tree Sparrow—The Plain Sparrow—The Golden Sparrow—The Rock Sparrow. The Hawfinches (*Coccothraustæ*) :—The Green Grosbeak—The Hawfinch—The Evening Cherry Hawfinch—The Large-beaked Hawfinch. The Parrot Finches (*Pityli*) :—The Rose-breasted Hawfinch—The Cardinal Grosbeak—The Dominican Finch—The Tiny Finch—The Diadem Grosbeak—The Ashy-blue Parrot Finch—The Masked Parrot Finch 131–148

The Habias (*Saltator*) :—The Capi. The Plant Cutters (*Phytotoma*) : The Rarita. The Tangaras Proper :—The Ornate Tangara. Fire Tangaras (*Pyranga*) :—The Flax Bird—The Fire Tangara. The Callistes (*Calliste*) :—The Red-necked Calliste. The Callous-beaked Tangaras (*Ramphocelus*) :—The Tapiranga. The Butcher-bird Tangaras (*Lanio*) :—The Black-headed Butcher-bird Tangara. The Organist Tangaras (*Euphone*) :—The Violet Organist. The Bright-coated Finches (*Amadinæ*) :—The Band Bird. The Hooded Finches (*Spermestes*) :—The Magpie Finch. Australian Finches:—The Reed Finches (*Donacola*):—The Chestnut Reed Finch. The Double-banded Reed Finch. The Grass Finches (*Poëphila*). Chaff-finches (*Chloëbia*):—The Admirable Chaff-finch—The Rice Bird—The Little Goldbreast—The Blood Finch—The Variegated Finch—The Steel Finch—The Butterfly Finch. The Astrilds (*Astrildæ*):—The Grey Astrild—The Pheasant Finch 148–165

PAGE

Weaver Birds (*Plocei*) :—The Social Weaver Bird—The Golden Weaver Bird—The Masked Weaver Bird—The Baya—The Crimson-beaked Weaver Bird—The Taha—The Flame-coloured Fire Finch—The Red-beaked Buffalo Weaver Bird—The Alecto Buffalo Weaver Bird—The Dinemelli Buffalo Weaver Bird 166–178

The Whydah or Widow Birds (*Viduæ*) :—The Yellow-shouldered Mourning Widow—The Long-tailed Widow Bird—The Paradise Widow Bird 178–181

The American Finches (*Passerella*) :—The White-throated Sparrow—The Morning Finch—The Tree Bunting Finch—The Prairie Bunting Finch—The Sea Bunting Finch 181–184

The Buntings (*Emberizæ*) :—The Crested Bunting—The Grey Bunting—The Golden Bunting—The Ortolan—The Red Bunting—The Black-headed Bunting—The Reed Bunting—The Lark Bunting—The Snow Bunting 185–195

The Larks (*Alaudæ*) :—The Calandra Lark—The Short-toed Lark or Calandrelle—The Black or Moor Lark—The Desert Lark—The Black-headed Bunting Lark—The Alpine Lark. The Larks Proper (*Alaudæ*) :—The Tufted Lark—The Wood Lark—The Sky Lark—The Sentry Lark. The Courser Larks (*Alaemon*) :—The Desert Courser Lark 195–202

RAVENS (*Coracirostres*).

The Starlings (*Sturnidæ*). The Troopials (*Agelaii*) :—The Boblink or Rice Bird. The Marsh Troopials (*Agelaius*) :—The Red-winged Troopial. The Cow Birds (*Molothrus*) :—The Cow Starling. The Yellow or Golden Starlings (*Icteri*) :—The Jamaica Yellow Bird—The Baltimore Golden Starling. The Cassicans (*Cassici*) :—The Japu, or Tufted Cassican. The Boat-tails (*Quiscalus*) :—The Great Boat-tail. The Starlings Proper (*Sturni*) :—The Common Starling—The Sardinian Starling—The Rose Starling—The Mina Birds—The Musical Grakle. The Ox-biters (*Buphagæ*) :—The African Ox-biter—The Red-beaked Ox-biter. The Glossy Starlings (*Lamprotornithes*)—The Bronze-coloured Glossy Starling—The Golden-breasted Glossy Starling—The Superb Glossy Starling—The Scaly Glossy Starling—The Brazen Glossy Magpie. The Rock Glossy Starlings (*Moriones*) :—The White-beaked Rock Glossy Starling. The Mountain Glossy Starlings (*Amydrus*) :—The Naburup. The Orioles (*Orioli*) :—The Satin Bower Bird—The Spotted Collar Bird—The Pirol, Golden Oriole, or Cherry Bird—The Golden-crested Oriole 210–243

The Birds of Paradise (*Paradiseæ*) :—The Footless Bird of Paradise—The Wumbi—The Ruby, or Red Bird of Paradise—The King of the Birds of Paradise—The Collared Bird of Paradise. Epimachi :—The Resplendent Epimachus—The Collared Epimachus—The Magpie Bird of Paradise 243–253

The Ravens Proper (*Coraces*). The Mountain Crows, or Choughs (*Fregili*) :—The Chough—The Snow Crow, or Alpine Chough. The True Ravens :—The Raven—The White-necked Vulture Raven—The Scapulated Raven. The Crows (*Corvus*) :—The Carrion Crow—The Hooded Crow—The Rook or Field Crow—The Jackdaw—The Glossy Crow—The Nutcracker. The Piping Crows (*Phonygamæ*) :—The Flute Bird—The Bell Bird or Bell Magpie—The Bald-headed Crow. The Tree Crows, or Jays (*Garruli*) :—The Magpie—The Blue Magpie. The Blue Ravens (*Cyanocorax*) :—The Hooded Blue Raven—The Crested Blue Jackdaw—The Common Jay—The Unlucky Jay. The Long-tailed Crows (*Glaucopes*). The Tree Magpies (*Dendrocitta*) :—The Wandering Magpie—The Benteot—The Long tailed Kitta—The Feather-beaks (*Cissa*) :—The Sirgang, or Green Jackdaw 254–283

The Plantain Eaters (*Amphibolæ*). The True Plantain Eaters (*Musophagæ*) :—The Banana Eater. The Helmet Birds (*Corythaix*) :—The White-cheeked Helmet Bird—The Turako. The Split Beaks (*Schizorhis*) :—The Alarm Bird. The Colies, or Mouse Birds (*Colii*) :—The Wiriwa—The White-cheeked Mouse-Bird 283–290

CATCHERS (*Captantes*).

Birds of Prey (*Raptores*). The Falcons (*Falconidæ*). The Noble Falcons (*Falcones*). The Hunting Falcons (*Hierofalco*). The Wandering Falcons (*Falco*) :—The Peregrine Falcon—The Red-necked Falcon—The Tree Falcon—The Berigora. The Kestrels (*Tinnunculus*) :—The Lark Kestrel—The Kestrel—The Red-footed, or Evening Falcon—The Sparrow Falcon. The Dwarf Falcons (*Hierax*) :—The Muti 291–312

LIST OF ILLUSTRATIONS.

PLATE I.—THE SCARLET MACAW.
,, II.—THE GROUND PARRAKEET.
,, III.—THE BLUE-STRIPED LORY.
,, IV.—EGGS.
,, V.—THE BULLFINCH AND GOLDFINCH.
PLATE VI.—THE WAGLERS CASSICUS.
,, VII.—THE SHARP-BILLED ORIOLE.
,, VIII.—THE RUBY BIRD OF PARADISE.
,, IX.—THE SPARROW HAWK.
,, X.—THE IMPERIAL EAGLE.

INTRODUCTION.

FIG. PAGE
1. Respiratory Apparatus of a Fowl 2
2. Wing of a Bird, partially stripped of Feathers, to show the insertions of the Quills . . 4
3. Nascent Feather of a Chicken 5
4. Head of a Swan (*Cygnus olor*) 6
5. Section of the Head of an Eagle, showing the structure of the Eye 7
6. Eye of an Owl, showing the arrangement of the Nictitating Membrane 8
7. Muscles of the Eye-ball and of the Nictitating Membrane 9
FIG. PAGE
8. External Ear of a Young Owl 10
9. The Throat of a Fowl, showing the parts *in situ* 11
10. Tongue of the Woodpecker, showing the mechanism employed for its protrusion . . 12
11. Viscera of Small Bird (*Euphone violacea*) . 13
12. Skeleton of a Goose 16
13. Ornithological Regions of the body of a Small Bird 19
14. Chicken in the Egg, newly arrived at maturity . 21
15. A Young Chicken, showing the arrangement of the Feathers 22

CLASSIFICATION OF BIRDS.

1. Cockatoos (*Cacatua*) 28
2. Collared Parrot (*Palæornis torquatus*) . . 29
3. The Jako (*Psittacus erithacus*) 36
4. The Amazon Parrot (*Chrysotis Amazonicus*) . 40
5. The Maitakka (*Pionus menstruus*) 41
6. The Crested Hawk Parrot (*Deroptyus accipitrinus coronatus*) 44
7. The Helmet Cockatoo (*Callicephalus galeatus*) . 48
8. The Nestor Cockatoo (*Nestor productus*) . . 49
9. The Casmalos (*Microglossus aterrimus*) . . 52
10. The Raven Cockatoo (*Calyptorhynchus Banksii*) 53
11. The Scarlet Macaw (*Ara Macao*) 61
12. The Garuba (*Conurus luteus*) 64
13. The Rosella (*Platycercus eximius*) 72
14. The Waved Parrot (*Melopsittacus undulatus*) . 73
15. The Corella (*Nymphicus Novæ Hollandæ*) . 76
16. The Ground Parrakeet (*Pezoporinus formosus*) . 77
17. The Purple-capped Lory or Lorikeet (*Lorius domicella*) 80
18. The Dappled Lorikeet (*Psitteuteles versicolor*) . 81
19. Tail-piece 82
20. The Large-beaked Cross-bill (*Loxia pityopsittacus*) 85
21. The Banded Cross-bill (*Loxia tænioptera*) . 88
22. Cross-bills (*Loxiæ*) 89
23. The Pine Grosbeak (*Pinicola enucleator*) . . 93
24. The Desert Trumpeter (*Bucanetes githagineus*) . 96
25. Female Bullfinch and Nest 104
26. The Girlitz (*Serinus hortulanus*) . . . 105
27. The Wild Canary 109
28. The Tame Canary 112
29. The Chaffinch (*Fringilla Cœlebs*) . . . 116
30. The Mountain Finch (*Fringilla montifringilla*) . 120
31. The Brown Linnet (*Cannabina linota*) . . 121
32. Siskin, Bullfinch, and Goldfinch . . . 125
33. Goldfinches and Nest 128
34. Winter Visitors to the Village 132
35. Sparrow's Nest 133

FIG. PAGE
36. The Tree Sparrow (*Passer montanus*) and the House Sparrow (*Passer domesticus*) . . 136
37. The Green Grosbeak (*Chloris hortensis*) . . 140
38. The Rose-breasted Hawfinch (*Coccoborus ludovicianus*) 144
39. The Dominican Finch (*Paroaria dominicana*) . 148
40. The Rarita or Rara (*Phytotoma Rara*) . . 149
41. The Guttarama (*Euphone violacea*) . . . 156
42. The Rice Bird (*Padda oryzivora*) . . . 160
43. The Pheasant Finch (*Astrilda undulata*) . . 164
44. Detached Nest of Male Gold-fronted Weaver Bird (*Oriolinus icterocephalus*) . . . 165
45. Nest of Astrilda, from Senegal . . . 165
46. Nest of Weaver Bird, slit open . . . 166
47. Nest of Mahali Weaver Bird 168
48. Nest of Social Weaver Bird (*Philetaërus socius*) 168
49. The Golden Weaver Bird (*Ploceus galbula*) and the Masked Weaver Bird (*Ploceus larvatus*) . 169
50. The Java Weaver Bird (*Baya*) and Nests . 172
51. Breeding Nest of the Golden-fronted Weaver Bird (*Oriolinus icterocephalus*) . . . 173
52. Nests of South African Weaver Birds . . 175
53. The Fire Finch (*Euplectes Petiti*) . . . 176
54. Dinemelli's Buffalo Weaver Bird (*Textor Dinemellii*) 177
55. The Paradise Widow Bird (*Vidua paradisea*) . 180
56. The White-throated or Song Sparrow (*Zonotrichia albicollis*) 181
57. The Ortolan, or Garden Bunting (*Emberiza-Glycyspina hortulana*) 188
58. The Black-headed Bunting (*Euspiza melanocephala*) 189
59. The Reed Bunting (*Cynchramus schœniclus*) . 192
60. The Lark Bunting (*Centrophanes lapponicus*) . 193
61. The Snow Bunting (*Plectrophanes nivalis*) . 194
62. The Calandra Lark (*Melanocorypha Calandra*) . 197
63. The Moor Lark (*Saxilauda Tatarica*) . . 200
64. The Desert Lark (*Ammomanes deserti*) . . 201
65. The Alpine Lark (*Phileremos alpestris*) . . 202
66. The Tufted Lark (*Galerita cristata*) . . 204
67. The Skylark (*Alauda arvensis*) . . . 205
68. The Sentry Lark (*Macronyx capensis*) . . 208
69. Tail-piece 209
70. The Boblink (*Dolichonyx oryzivorus*) . . 212
71. The Red-winged Troopial (*Agelaius Phœniceus*) 216
72. The Cow Starling (*Molothrus pecoris*) . . 217
73. The Baltimore Bird 220
74. The Great Boat-tail (*Quiscalus major*) . . 221
75. The Common Starling (*Sturnus vulgaris*) . 224
76. The Rose Starling (*Pastor roseus*) . . . 228
77. The Musical Grakle (*Gracula musica*) . . 229
78. The Red-beaked Ox-biter (*Buphaga erythrorhyncha*) 232
79. The Superb Glossy Starling (*Notauges superbus*) 233
80. The Scaly Glossy Starling (*Pholidauges leucogaster*) 236
81. The Satin Bower Bird (*Philonorhynchus holosericus*) 237
82. The Spotted Collar Bird (*Chlamydera maculata*) 240
83. The Pirol, or Golden Oriole (*Oriolus galbula*) . 241
84. Birds of Paradise 244
85. The Red Bird of Paradise (*Paradisea rubra*) . 245
86. The Resplendent Epimachus (*Seleucides resplendens*) 249
87. The Collared Epimachus (*Epimachus magnus*) 252
88. The Magpie Bird of Paradise (*Astrapia gularis*) 253
89. The Chough (*Fregilus graculus*) . . . 256
90. The White-necked Vulture Raven (*Corvultur albicollis*) 259
91. The Scapulated Raven (*Pterocorax scapulatus*) . 260
92. The Raven (*Corax nobilis*) 261
93. The Carrion Crow (*Corvus corona*) . . . 262
94. The Rook (*Corvus frugilegus*) 264
95. The Jackdaw (*Monedula turrium*) . . . 265
96. The Nutcracker (*Nucifraga caryocatactes*) . 268
97. The Flute Bird (*Gymnorhina tibicen*) . . 269
98. The Magpie (*Pica caudata*) 273
99. The Crested Blue Jackdaw (*Cyanocitta cristata*) 276
100. The Common Jay (*Garrulus glandarius*) . . 277
101. The Wandering Magpie (*Dendrocitta vagabunda*) 281
102. The Banana Eater (*Musophaga violacea*) . . 284
103. The White-cheeked Helmet Bird (*Corythaix leucotis*) 285
104. The Alarm Bird (*Schizorhis zonurus*) . . 288
105. The Wiriwa (*Colius Senegalensis*) . . . 289
106. Oriental Falconry 297
107. The Peregrine Falcon (*Falco peregrinus*) . . 301
108. The Falconer 304
109. The Tree Falcon (*Hypotriorchis subbuteo*) . 305
110. The Lark Kestrel (*Tinnunculus alaudarius*) . 308
111. The Red-footed or Evening Falcon (*Erythropus vespertinus*) 309

CASSELL'S
BOOK OF BIRDS.

EDITOR'S INTRODUCTION.

WE were some time ago both delighted and astonished by the performances of a German artist, who imitated with wonderful exactness the notes of a variety of birds. The song of the nightingale and the warblings of the skylark, the whistling of the throstle and the out-poured melody of the canary, were gone through with such perfect execution, that the birds themselves, we thought, could scarcely have detected a flaw in the performance. This gifted individual introduced himself to his audience by a somewhat humorous account of the manner in which he had acquired his extraordinary powers. He told us that his father, who was a breeder of birds, had upon one occasion gone from home, leaving a bag of rice as provision for his children, and a quantity of bird-seed for his feathered protégés. By some mistake the rice had been given to the birds, and the bird-seed to the children, the consequence being, that on the gentleman's return he found his birds all dead, and his children singing like piping bullfinches. How far this explanation was satisfactory we will not stop to inquire; but we have sometimes been almost tempted to suppose that some similar accident must be of frequent occurrence in Germany. The deep acquaintance of the ornithologists of that country with the objects of their study, and the fidelity with which they note down the minutest incidents connected with the history of their favourites, surpassing anything achieved by other naturalists, not even excepting such enthusiastic labourers as Wilson and Audubon, demands our warmest praise; while the patient industry, so conspicuous in their writings, at once calls for and excites our admiration.

Among the foremost of his countrymen in the cultivation of ornithological research stands the author of the magnificent work whose pages it is our wish to lay before English readers. Not content with studying the natural history of his favourites from books, or even in the rich scientifically arranged collections contained in so many Continental museums, his zeal led him to follow them even into their own wild retreats, and, gun in hand, to penetrate the burning deserts of Eastern Africa, and the equally inhospitable, and then but little known, regions of Abyssinia. By thus familiarising himself with the habits of birds in their native haunts, and amid the scenery whereby they are surrounded in a state of nature, he has been enabled to impart a freshness to his descriptions as characteristic of the real naturalist as the smell of new-made hay is redolent of fields and hedgerows, and no more to be imitated by the mere compiler than the voice of an orator by the reporter of his speeches.

Before, however, we permit our author to speak for himself, it may perhaps be desirable to preface his remarks by a few general observations concerning the structure of the beautiful creatures that form the subjects of his teaching, inasmuch as it is obviously desirable to have clear notions concerning the machinery employed before its adaptation to its intended uses can be made manifest; and further, because in the study of ornithology, as in every other branch of natural history, there are certain conventional terms that may require explanation before the words used in describing an object are intelligible to the uninitiated.

The Bird is an inhabitant of the air in the fullest sense of the expression. The atmosphere is emphatically the sphere of its activity; it mounts it as it would a ladder; it sails through it in triumph, and rides upon the winds as upon a fleet steed. Moreover, it is the atmosphere itself which endows the feathered Ariel with such capabilities, and it is in the perfection of his respiration that we must search for an explanation of his wonderful achievements.

The muscular activity of every animal is intimately dependent upon the efficiency of its breathing apparatus, upon the freedom with which the vital element finds admission to the blood which it is destined to renovate, and upon which it confers those qualities so inseparably connected with the elimination of increased temperature, and the vigour of muscular action. In this respect, as we shall see immediately, the feathered races surpass all living creatures, with the exception, perhaps, of the members of the insect creation.

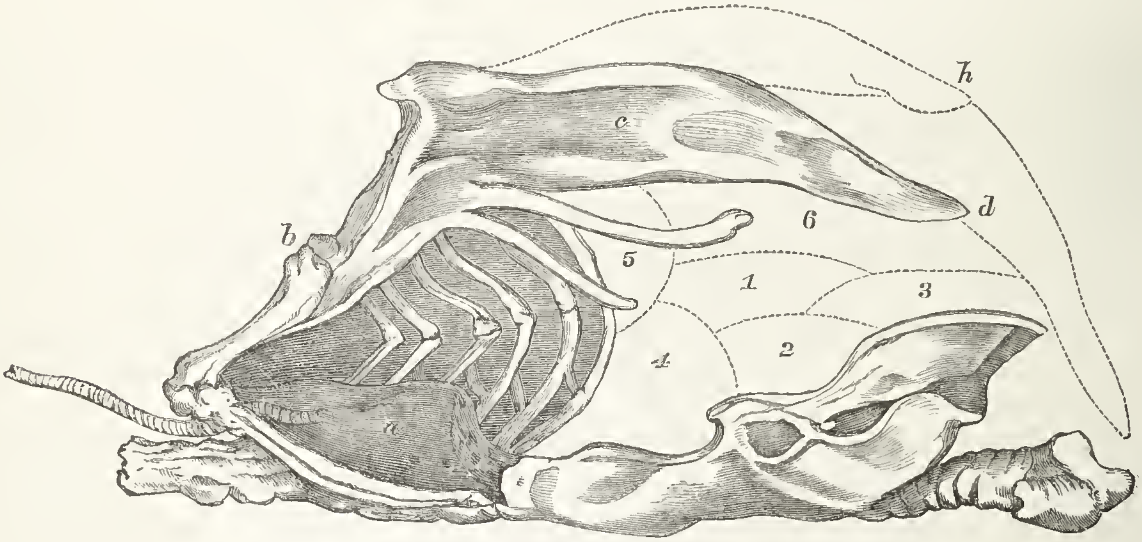


Fig. 1.—RESPIRATORY APPARATUS OF A FOWL.

a, the Lungs, immovably fixed; *c*, *d*, the Breast-bone, moving as upon a hinge at *b*, so that it can be raised to the position indicated by dotted lines at *h*. 1, 2, 3, 4, 5, 6, Cells, with membranous walls, into which the air is freely admitted during the act of inspiration.

The lungs of a bird are not suspended, like those of a quadruped, within a circumscribed chest or thoracic cavity, in such a manner as to become inflated by each inspiration; they are rather to be described as soft, porous, and highly vascular organs, through which the air passes as through the interior of a sponge. The movements of the chest, upon which depend the inspiration and expiration of the atmospheric fluid, may be compared to those of a bellows continually employed in taking in and expelling the surrounding element by a mechanism represented in the accompanying figure (Fig. 1). The framework of the chest, consisting of the ribs and of the breast-bone, is so put together that at each inspiration it can be raised, as shown in the drawing, from the position *d* to the position *h*, thus materially enlarging the thoracic chamber, just as the upper board of an ordinary bellows is raised for the purpose of taking in the air; but, in this case, the surrounding element, instead of entering through a valve-defended orifice, rushes down the windpipe, and through the immovable, sponge-like lungs, permeating the wide passages with which they are perforated, and not only filling the entire thorax, but penetrating into the interior of the very bones, which are left marrowless for its reception.

The mechanism whereby expiration is effected is equally simple; just as, when the upper board of the bellows is depressed, the air is forced out through the nozzle, so, by the return of the breast-bone to its former position, the inspired air is again forced to pass through the lungs and make its escape by means of the windpipe. By this process it is obvious that the vital element—the oxygen of the atmosphere—being admitted to every part of the system, the blood is vitalised to the greatest possible extent, its temperature is raised until the heat of the body of a bird is far greater than that of an ordinary quadruped, and its vitality is proportionately exalted. Consequently, as the blood circulates through the system, it carries with it heat and life in superabundance; the energies of the entire system are roused to the uttermost; the fibres of every muscle quiver with intense life, like a steam-engine working under high pressure, thus enabling the falcon to cleave the skies with the velocity of a falling thunderbolt, and not only qualifying the swallow for its rapid flight, but enabling it to achieve its wonderful migrations.

This admission of air into every part of the system serves not only to fan the vital flame, and rouse the energies of the bird to an extraordinary degree of tension; it likewise assists in giving buoyancy to its movements, bearing it upward, as the gas does a balloon; for it is evident that the air received into the body being raised to a temperature corresponding to the heat of its blood, the specific gravity of the bird is proportionately diminished, and it rises into the air almost without an effort, and even hovers in the sky with scarcely a perceptible movement of its wings.

A knowledge of the mechanism of their mode of respiration will likewise enable us to explain another remarkable feature in the history of the feathered tribes, namely, their power of song. Who that has listened to the prolonged warblings of a linnet, the flood of melody poured forth from the little throat of the canary, the "lengthened sweetness long drawn out" which almost pains the enraptured ear as we listen to the song of the nightingale, but has wondered how such tiny birds can ever find sufficient breath for the utterance of such long-sustained, such interminable notes? What would our prima-donnas at the opera give for but the tithe of the capacity of these favoured little songsters? No human breast could ever hold sufficient breath for such performances. We now see, however, that the vocal organs of a bird are exactly adapted to the nature of their music. Their whole body is a bellows, as large in proportion to their size as the bellows of an organ is in relation to the pipes into which it has to pour the sound. The little bird is, in fact, a living harmonium—its singing apparatus is not situated at the top of its throat, but is implanted in the inferior termination of its windpipe; and just as the tongue of the harmonium is thrown into vibration by the issuing current of air caused by pressure upon the bellows, so are the vocal chords of the feathered songster rendered sonorous as the air passes over them. In proportion to the capacity of the bellows must be the duration of the note, and we have already seen that the air-cells of the bird are capable of furnishing a supply not easily exhausted. There is, however, this remarkable difference between the two instruments: the tongue of each key of the harmonium can give utterance but to one sound—one never-varying tone—while the corresponding part of the bird, rendered more or less tense by muscles provided for the purpose, contains within itself a whole gamut, and there is not a note in the scale that is not instantly at the command of the inimitable little musician. In the perching birds, among which are found by far the most accomplished singers, five pairs of muscles are connected with this exquisitely-contrived apparatus, and are so disposed as to influence both the diameter and the length of the air-passages. In the parrots three pairs are met with; some of the swimming birds have two, while others have only one; and in a few—as the king of the vultures and the condor—vocal muscles are quite wanting.

Seeing that the temperature of birds is raised so much above the usual standard by the arrangements described above, some clothing is requisite, adequate to retain the vital heat. Another indispensable provision is therefore met with in the Feathers with which all birds are so warmly clad. Indeed, so peculiar is the texture of these admirable fabrics, that no better distinctive appellation could be devised for the entire class than that of the "feathered tribes," by which they are frequently designated. A feather realises in its structure more qualities than imagination could have conceived it possible to combine—lightness, thickness, warmth, durability, elasticity, softness, strength, and beauty. It is one of the master-works of creation. Whoever has examined a feather under the microscope will testify to the incomparable perfection of the contrivance. Every feather is a mechanical wonder. If we look at the quill-portion, or barrel, we find it possessed of attributes not easily brought together—strength and lightness. If we cast our eye upon the upper part of the stem, we see a material made for the purpose, which is used in no other class of animals, and in no other part of birds—tough, light, pliant, elastic—the pith. This is also a substance *sui generis;* it is neither bone, flesh, membrane, nor horn.

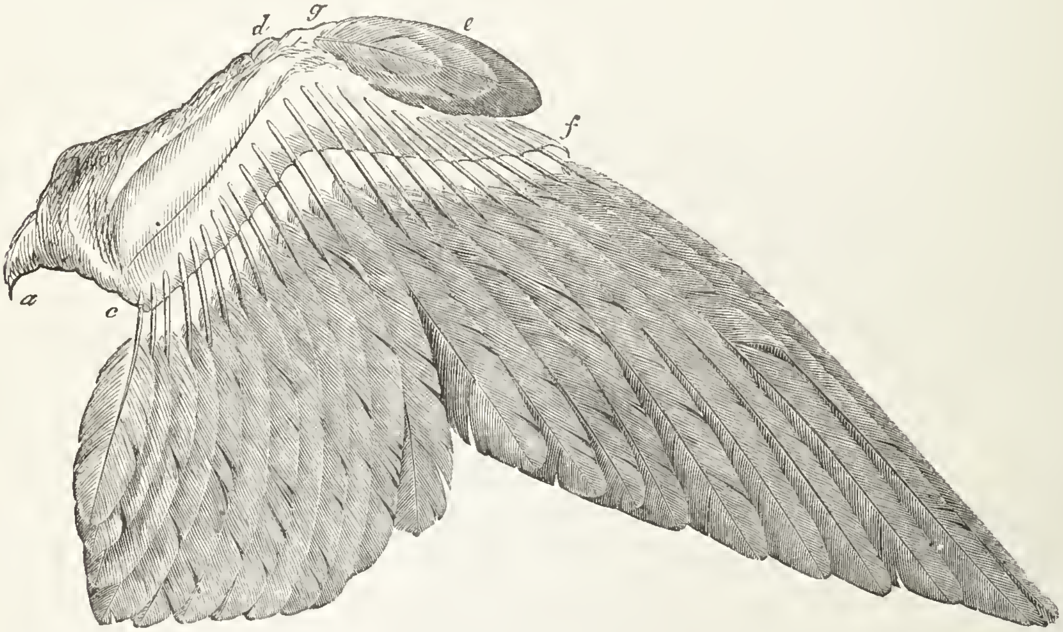


Fig. 2.—WING OF A BIRD PARTIALLY STRIPPED OF FEATHERS, TO SHOW THE INSERTIONS OF THE QUILLS.

a, the Arm ; *d*, the Fore-arm ; *g*, the Thumb ; *c*, the Secondary Quills, implanted into the Fore-arm ; *f*, the Primary Quills, implanted into that portion of the Wing which represents the hand ; *e*, the Spurious or Bastard Quills, derived from the Thumb.

But the most wonderfully constructed part of a feather is the *plume*, or, as it is sometimes called, the *web*. This is affixed to each side of the stem, and constitutes the broad expansion of the feather, that part which we usually strip off when making a pen. One of the first things to be remarked is that the web is much stronger when pressed in a direction perpendicular to the flat plane of the plume than when rubbed either up or down in the direction of the stem ; the reason of this is that the web is composed of numerous flat, thin, and broad laminæ, arranged with their flat sides together, so that, although they easily bend towards each other, they offer great resistance in the direction in which they have to encounter the impulse and pressure of the air ; and it is in this direction only that their strength is wanted and put to the test.

Another particularity is still more admirable. Whoever examines a feather cannot help noticing that the laminæ of which we have been speaking, in their natural state seem to be fastened together. Their adhesion to each other is manifestly something more than mere apposition ; they are not to be separated without a certain degree of force, and, as there is evidently no glutinous cohesion between them, it is plain that by some mechanical means or other they catch or clasp among themselves, thereby giving to the web its closeness and compactness of texture. Nor is this all. When two laminæ which have been separated by accident or design are brought together again, they immediately reclasp; the connection, whatever it was, is perfectly restored, and the web of the feather becomes as smooth and firm as if nothing had happened to it. Draw your finger down the feather, which is, so to speak, against the grain, and you will probably destroy the junction between some of the contiguous laminæ; draw your finger up the feather in the opposite direction, and you restore all to their former state of coherence. This is no common contrivance. Let us now inquire concerning the mechanism whereby it is effected. The laminæ above mentioned, examined individually, are found to be provided with vast numbers of long fibres, or teeth, which project from their edges in such a manner that, when placed in contact, those of contiguous laminæ hook and grapple together. The fibres are extremely minute; indeed, fifty of them have been counted by means of the microscope in the space of the $\frac{1}{20}$th of an inch. Every fibre is crooked, but bent after a definite manner; those that proceed from one edge of a lamina are long, flexible, and bent downwards, whereas those that proceed from the opposite edge are shorter, firmer, and turned upwards. The manner in which they are united is, therefore, as follows: When two contiguous laminæ are pressed together, so that the long fibres are forced far enough over the short ones, their crooked parts fall into the angles formed by the crooked parts of the others, just as the latch of a door falls into the cavity of the catch fixed to the door-post, and there hooking itself, fastens the door. This admirable structure, which may be readily seen with a very ordinary microscope, ensures not only the union of the laminæ, but renders it possible that when any two of them have been separated by violence they will become re-connected with facility and expedition. In the ostrich, this apparatus of crotchets and fibres, of hooks and eyes, is wanting; the filamentary laminæ hang loose and separate, forming a kind of down; but such a plan of construction, however it may fit the plumes for the flowing honours of a lady's head-dress, must be considered as detrimental to the bird, inasmuch as wings composed of such feathers, although they may assist in running, will not serve for flight.

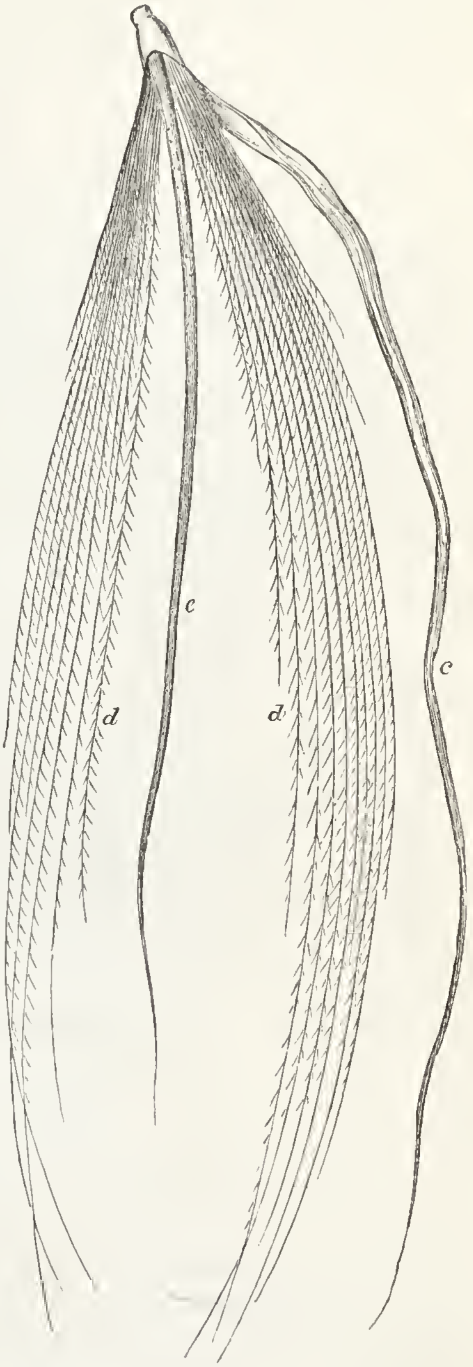


Fig. 3.—NASCENT FEATHER OF A CHICKEN.

c, the External Horny Sheath, slit open; *d*, *d*, Web of the Feather produced in successive layers from the central stem, *e*.

The power of inflating their whole body with air, and the possession of feathers, are therefore the most distinctive endowments of a bird, inasmuch as these attributes are quite peculiar to the class.

To creatures thus gifted with strength and activity so extraordinary, it is manifest that perceptions of great acuteness are requisite, corresponding with the rapidity of their movements and the intelligence necessary for the performance of the important duties entrusted to their charge; and in this respect, as will be made manifest by a perusal of their history, they occupy a position in the economy of nature fully equal or even superior to that enjoyed by the most favoured quadrupeds. The mental faculties of the parrots correspond with those of the monkeys, whom in their habits and capabilities these birds closely resemble; in cunning they are quite upon a par with their four-handed neighbours, with which, in the forests of tropical countries, they are so generally associated; and when removed from their native woods, and made, as they often are, the companions of mankind, the facility with which they can be taught to imitate human actions—nay, to mimic our very speech—bears ample testimony to the exalted character of their mental capacities.

On examining the brain of a bird, the anatomist is therefore by no means surprised to find that, both in its development and in the perfection of its structure, it surpasses that of many quadrupeds. The proportionate volume of the brain of some of our singing birds, as compared with the dimensions of their body, is astonishing, and reveals to us at a glance the reason why these little favourites are so sagacious and so eminently susceptible of education. (See Fig. 4.)

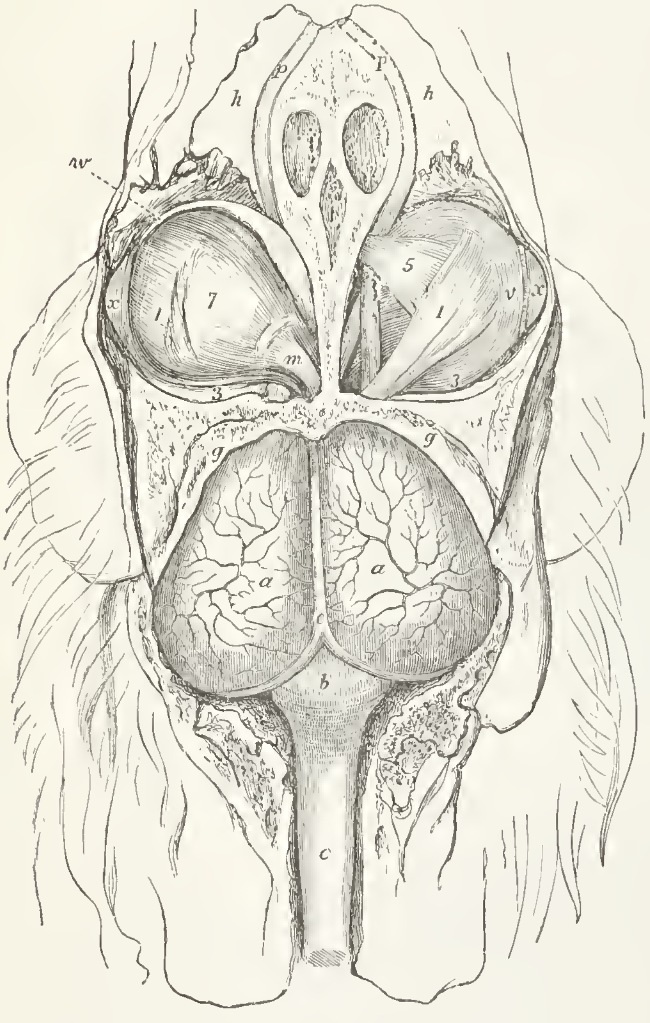


Fig. 4.—HEAD OF A SWAN (*Cygnus olor*).

The upper part of the skull has been removed to show the brain and eyes *in situ*. *a*, *a*, the Cerebral Hemispheres; *b*, the Cerebellum; *c*, the Spinal Cord. All the above parts are represented covered by their investing membranes. *e*, Sinuses of the Dura Mater; *g*, *g*, Walls of the Skull; *h*, *h*, Base of the Beak; *m*, Optic Nerve of the Left Eye; *p*, *p*, Large sentient Nerves supplying the Bill; *v*, Bony Ring in front of the Eye-ball; *x*, *x*, Transparent Cornea; 1, 3, 5, 7, Muscles moving the Eye-ball.

In strict correspondence with this exalted condition of their cerebral organisation are the senses whereby they hold intercourse with surrounding nature. Their power of vision is beyond our comprehension, and the elaborate contrivances whereby the eye of a bird is adapted to its peculiar mode of life, might furnish materials for a lengthy treatise, imperfect as is our knowledge of the numerous delicate arrangements demonstrable by anatomical skill in every part of its structure. At present we can but briefly allude to a few of the more conspicuous peculiarities wherein the visual apparatus of a bird differs from that of other creatures.

The distances from which the vulture and the hawk can see their prey are almost incredible. To have the "eye of a hawk," to see with "eagle glance," are expressions which, though common enough, give but a very feeble idea of the extent to which those birds are gifted in this respect, or of the vast expanse bounded by their horizon. The falcon sees its diminutive prey from an altitude at which it is itself invisible, and from the very sky swoops down upon its quarry with the velocity of a shot, rarely missing its victim, and thus proving at once the perfection of its sight and the steadiness of its aim. The eye of these birds must therefore be constructed after the plan of a telescope, and its focus adapted to long-sightedness. Its axis must be lengthened to an extent greater than is compatible with a spherical form of the eye-ball. To meet this requirement a circlet of bony plates, constituting a firm but at the same time somewhat flexible ring or hoop, is introduced into the composition of the outer coat of the eye, whereby the requisite elongation is effected, and the organ is thus adapted for perfect vision at a great distance. (See Fig. 4.)

The above beautiful arrangement, however, constitutes but a part of the mechanism required. A telescope adjusted for distant vision is quite useless when brought to bear upon an object close at hand, and its focus must necessarily be altered in accordance with the changed conditions. In the case of the telescope, the needful adjustment would be effected by shortening or lengthening the sliding tube; but in the bird some other plan is evidently indispensable, and few contrivances in animal mechanics are more admirable than that which is adopted. Embedded in the transparent vitreous humour of the eye is a peculiar apparatus called the "marsupium," the texture of which resembles that of the human iris. Now the iris, as we all know, being eminently sensitive to the intensity of light, by its spontaneous contractions and dilatations is enabled to alter the diameter of the pupil of the eye, and thus exactly control the quantity of light admitted. The marsupium, equally sensitive, and equally spontaneous in its action, swells or contracts its dimensions, filling or emptying itself like a sponge, and thus adjusting the lenses of the eye so as to secure perfect vision at whatever distance the object to be seen may be placed. The quickness of sight with which birds are gifted is equally remarkable. The swallow is proverbially one of the swiftest flyers in the feathered creation, and yet in the full career of its flight it is looking on the right hand and on the left, upwards and downwards, for its food. The insects upon which it preys are often exceedingly minute, sometimes flying above and sometimes below the level of the swallow's course, and yet they are seen and captured without any diminution of the prodigious rate at which the bird is flying. Nay, more, any one who attentively watches one of these birds skimming over a meadow, may perceive that it will capture two or even three insects in such quick succession as to convince him that the swallow must have "had an eye upon them" all at once, and yet they are caught, as it were, in a moment.

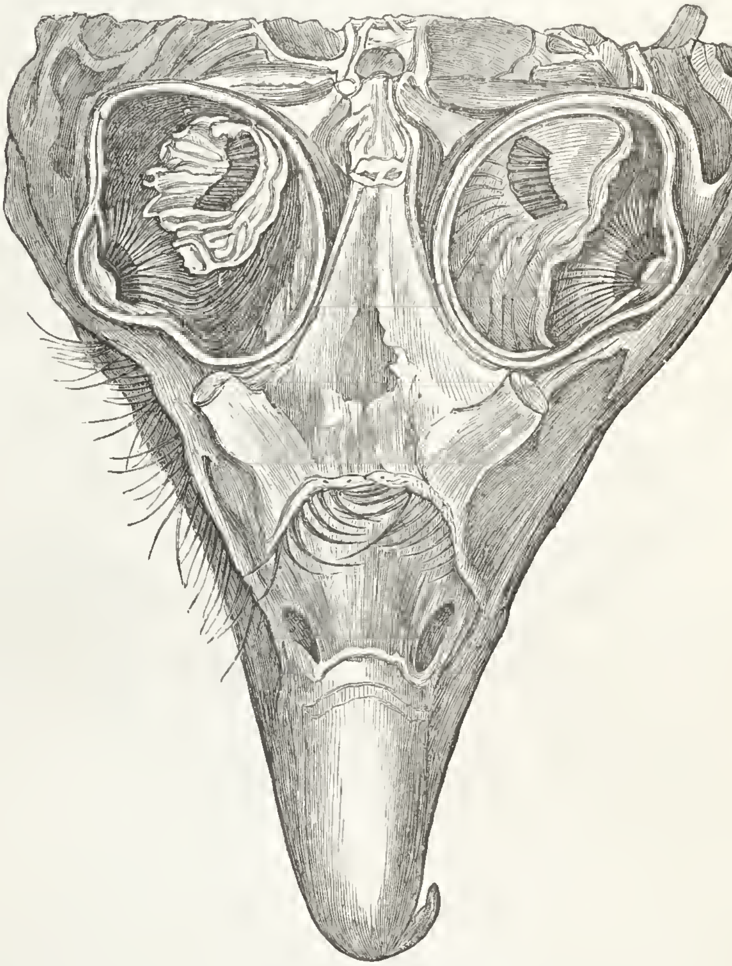


Fig. 5.—SECTION OF THE HEAD OF AN EAGLE, SHOWING THE STRUCTURE OF THE EYE.

Another admirable contrivance peculiar to the feathered race, is the existence of a thin, semi-transparent veil, which, when requisite, can be instantaneously drawn over the front of the eye. This apparatus, generally known as the "nictitating membrane," is useful for a variety of purposes; it sweeps over the eye to cleanse it from dust, it diffuses the tears which keep it bright and polished, it will act as a screen to shut out the too great intensity of light, so that with its assistance the eagle can confront the sun even at noon-day; it will likewise defend the eye from sudden injuries, and yet, even when drawn like a curtain over the pupil, not shut out the light. The commodious manner in which this membrane lies folded up in the inner corner of the eye, and the quickness with which it executes its purpose, are known to every observer; but what is equally admirable, though not quite so obvious, is the employment of two kinds of material, and the combination of two kinds of force, by which the movements of this membrane are effected. It is not, as in ordinary cases, by the action of two antagonist muscles, the one pulling it forward and the other backward, but the membrane itself, being elastic, is capable of being drawn out like a thin sheet of india-rubber, and of returning to its former position when the force acting upon it is removed. Such being its nature, in order to adapt it for its office it is connected by a tendon with a muscle situated at the back part of the eye. This tendon, though strong, is so fine as not to obstruct the sight, even when it passes across the pupil, and the muscle which moves it being situated deeply within the orbit, derives from its situation the advantage of not only being secure from injury, but of being out of the way, which it hardly would have been in any position that could be assigned to it in the front of the eye, where its function really lies. When this muscle contracts, the membrane, by means of the communicating tendon, is instantly drawn, as it were, by a thread, over the transparent cornea, and when the muscle ceases to act, the elasticity of the membrane is sufficient to bring it back into its former position. (See Fig. 6.)

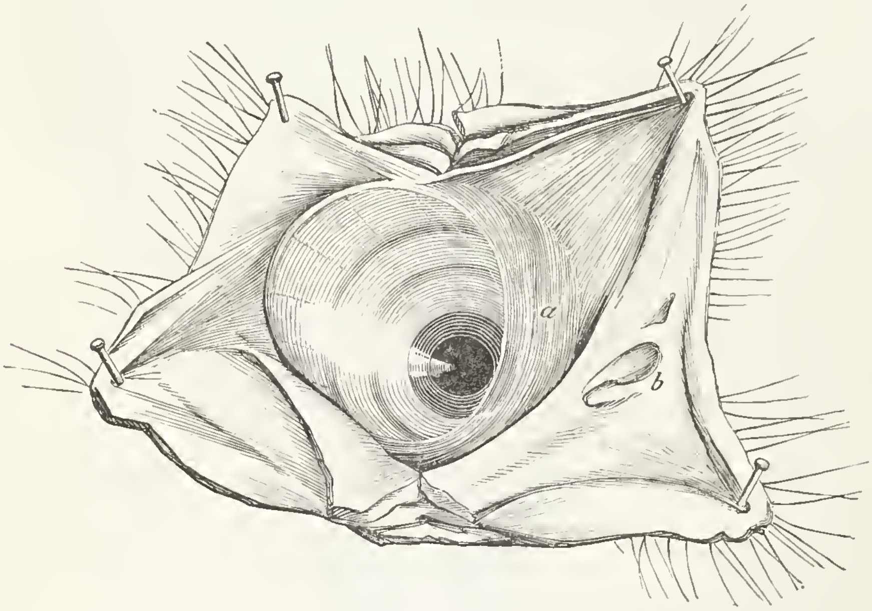


Fig. 6.—EYE OF AN OWL, SHOWING THE ARRANGEMENT OF THE NICTITATING MEMBRANE.

Both eyelids are divided through their middle, and everted, so as to display the Nictitating Membrane, *a*, and the passage for the tears (*puncta lacrymalia*), *b*.

But this is not all. In the arrangement of the muscle which, though placed behind the eye, draws the nictitating membrane in front of it, there is what justly deserves to be called a marvellous piece of mechanical contrivance. The extent of contraction necessary to draw the membrane over the whole front of the visual organ would require a much longer muscle than could have been placed in such a situation; in order to meet this difficulty, the tendon which draws forth the nictitating membrane is made to pass through a loop in another muscle, as represented in the next wood-cut (Fig. 7), where it is evident that, by the simultaneous contraction of both these muscles, the extent of their action when drawing the nictitating membrane over the eye is considerably increased. Neither is this the only advantage derived from so ingenious a contrivance; were it not for the plan adopted, the tendon of the muscle *u x* would press upon the optic nerve, and thus materially interfere with vision —an inconvenience that by the existing arrangement is totally prevented. Devices like these, whereby special machinery is introduced for special purposes, speak for themselves; we acknowledge their beauty, and in them we recognise at once the wisdom and the goodness of the CREATOR.

The SENSE OF SMELL in birds has afforded subject-matter for much discussion, and great obscurity still exists with reference to the extent to which they make use of their olfactory organs. It has been generally asserted that birds of prey are gifted with an acute perception of odours, and are thus enabled to discover their food at a distance; but the rapidity with which vultures are known to assemble round the carcase of an animal too recently killed to attract them by putrefactive exhalations, has induced many observers to consider them as being directed entirely by sight. That this latter is the preferable theory appears to be sufficiently established by the experiments of Audubon, which go to show that these birds possess a sense of smell very far inferior to that conferred upon carnivorous quadrupeds, and that, so far from guiding them to their prey from a distance, it affords them no indication of its presence even when close at hand.

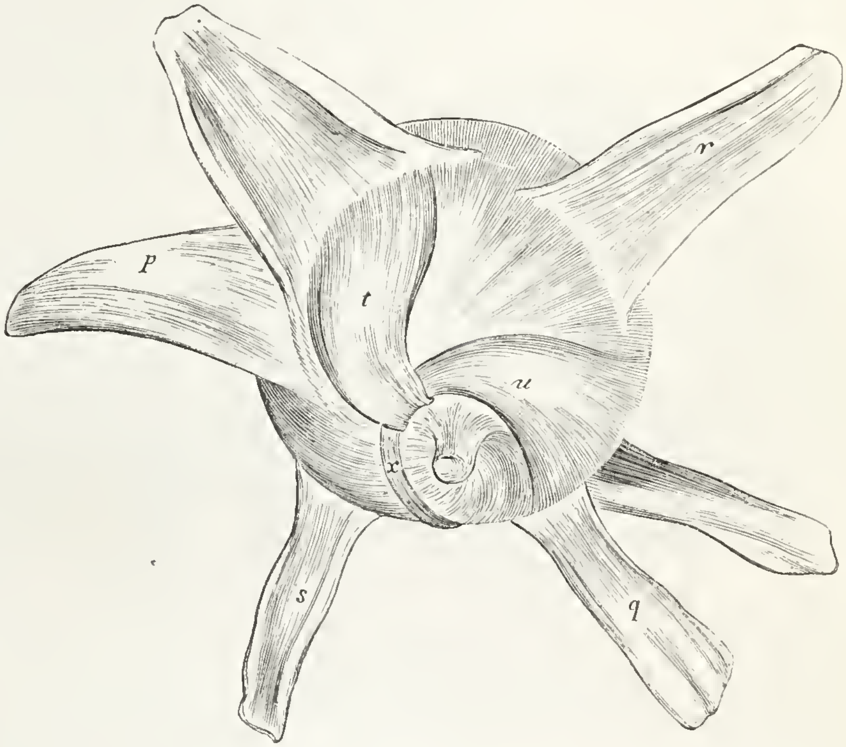


Fig. 7.—MUSCLES OF THE EYE-BALL AND OF THE NICTITATING MEMBRANE.

The Muscles of the Eye-ball, *p*, *q*, *r*, *s*, are separated from their origins, and turned aside, to show the "trochlearis" or "quadratus," *t*, and the "pyramidalis," *u*, *x*; the latter of which passes through a loop in the former, so as to gain a double extent of effect with a given length of fibre.

Having procured the skin of a deer, M. Audubon stuffed it full of hay, and after the whole had become perfectly dry and hard, he placed it in the middle of an open field, laying it down on its back in the attitude of a dead animal. In the course of a few minutes he perceived a vulture flying towards and alighting near it. Quite unsuspicious of the deception, the bird immediately proceeded to attack the carcase, as usual, in the most vulnerable points. Failing in this, he next, with much exertion, tore open the seams with which the skin had been stitched, and appeared earnestly intent upon getting at the flesh which he expected to find within, and of the absence of which not one of his senses was able to inform him. Finding that his efforts, which were long reiterated, led to no other result than the pulling out of sundry quantities of hay, he at length, though with evident reluctance, gave up the attempt, and took flight in pursuit of other game.

Another experiment, the converse of the preceding, was then tried:—A large dead hog was concealed in a narrow and winding ravine, about twenty feet deeper than the level of the ground around it, and filled with briars and high cane. This was done in the month of July, in a tropical climate, where putrefaction takes place with great rapidity; yet, although many vultures were seen sailing in all directions over the spot where the putrid carcase was lying covered only with twigs of cane and light underwood, none of them appeared at all to suspect its presence.

Nevertheless, notwithstanding the apparently decisive result of the above experiments, anatomy teaches us that the olfactory apparatus in this class of animals is largely developed, and indicates by its extent that it is well adapted to investigate the odorous properties of the air taken in for respiration.

The SENSE OF HEARING in birds is remarkably acute, as might be readily inferred from the vocal capabilities conferred upon many of these gifted songsters. Their music is certainly not less appreciated by the performers than it is by their auditors. "Nobody can doubt," observes Bishop Stanley, "who sees a bird singing, clapping its little wings, turning from side to side, and glancing its bright eyes in all directions, as if courting attention and admiration, that it feels delight and satisfaction. Did we require further proof, we have but to recollect that the song-bird is most alert with the music of its voice when its affections and interests are awakened by its mate during the time of rearing its young." It is, indeed, principally during the breeding-season that the singing power of birds is in full activity; and seeing that in general it is only the male that possesses the musical faculty, we may naturally suppose that its exercise is intended for the solace and amusement of his mate during her confinement to her nest. The nightingale himself becomes voiceless so soon as the appearance of his nestlings calls him to more profitable employment.

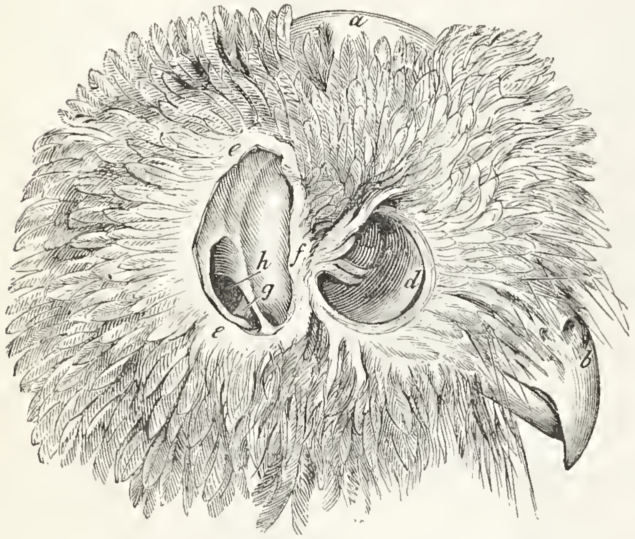


Fig. 8.—EXTERNAL EAR OF A YOUNG OWL.

a, the Upper Part of the Head, partially denuded of feathers; *b*, the Beak; *d*, the Eye; *e*, *e*, *f*, Marginal Fold of Skin surrounding a cavity, the interior of which somewhat resembles the folds of the human ear; *g*, Auditory Passage leading to *h*, the Drum of the Ear (*membrana tympani*).

It is, however, among the nocturnal birds that the faculty of hearing is more specially developed. In the generality of birds there is no provision made externally for catching or concentrating sonorous impressions; but in the owls, the bustards, and a few others that venture forth at night, we find a different arrangement. In the owls, more especially, an external auditory apparatus is very conspicuous; not only does the integument exhibit a variety of folds, the disposition of which forcibly reminds us of the human ear, but the feathers upon the sides of the head are so disposed as to fulfil in some degree the purposes of a hearing trumpet. (See Fig. 8.) In such species the sense of hearing is exquisitely developed.

In the generality of birds the SENSE OF TASTE can scarcely be said to exist. The manner in which they obtain and swallow their food precludes the possibility of enjoyment from this source, so that their tongue is in many cases appropriated to some totally different use. In by far the greater number the tongue is small, thin, and cartilaginous; the extremity is flat, and incapable of being protruded beyond the bill. (See Fig. 9.) There are, however, great varieties in the construction of this organ, a few of which will require our notice.

The tongue of the parrot, although its substance is not so fleshy, has some resemblance to that of man, and it is probable that this is one of the circumstances enabling these birds to imitate the human voice with so much facility.

In the family of the toucans and some others, the tongue, without being extensible, is fully as long as the largely developed bill, and, moreover, its sides are fringed like those of a feather. A tongue of this description may probably be endowed with some delicacy of taste, enabling these birds to appreciate the flavour of the fruits on which they feed.

Birds of the duck family have the largest tongues. Owing to its fleshy appearance it more nearly resembles the human tongue than even that of the parrot. Birds of this family discriminate their food not by sight, but by the delicate sense of touch with which their tongue is endowed. They thrust their bill into the mud, and from the mouthful thus obtained select, by means of their tongue alone, whatever is fit for food, rejecting the rest.

The smallest tongues are found in the night-jars and swallows, two groups which at the same time are distinguished by having the largest mouths in proportion to the size of their bodies; and in this case the design is equally apparent. These birds feed upon living insects captured during their rapid flight, and immediately swallowed whole; taste is out of the question. A large tongue would only be in the way, and it is therefore reduced to a mere rudiment.

In the preceding examples the length of the tongue never exceeds that of the bill; but in the case of the woodpeckers it is protrusible to a wonderful extent. On opening the bill of a woodpecker immediately after it has been killed, the tongue seems of ordinary length, or indeed rather short, and shaped somewhat like the spears used by the Caffres in South Africa, called *assagais*, pointed at the end and furnished with numerous barbs. (See Fig. 10.) This, however, is only the tip of a very remarkable instrument. If the barbed portion be drawn out of the mouth, a person unacquainted with its nature would think that he had got hold of a very long earthworm that the bird had incautiously tried to swallow, but which had stuck in its throat; hence a tongue of this description is called *vermiform*. The point in its usual position reposes in the ordinary manner between the mandibles; the rest is concealed, but is susceptible of extension, at the pleasure of the bird, to four or five times the length of the bill. The act of protrusion is effected by the remarkable structure of the root of the tongue, or more properly of the *os hyoides*, or bony apparatus whereby it is attached. The posterior prolongations derived from the *os hyoides* are compactly curved around the back of the skull; and occasionally they are prolonged forwards to such an extent as actually to reach the nostrils. By means of this somewhat complex arrangement the woodpecker, having broken away the bark of a tree by the powerful strokes of its bill, and thus laid open the retreat of the insects beneath, suddenly darts outs its tongue, spears its prey, and instantly brings the transfixed insect into its mouth.

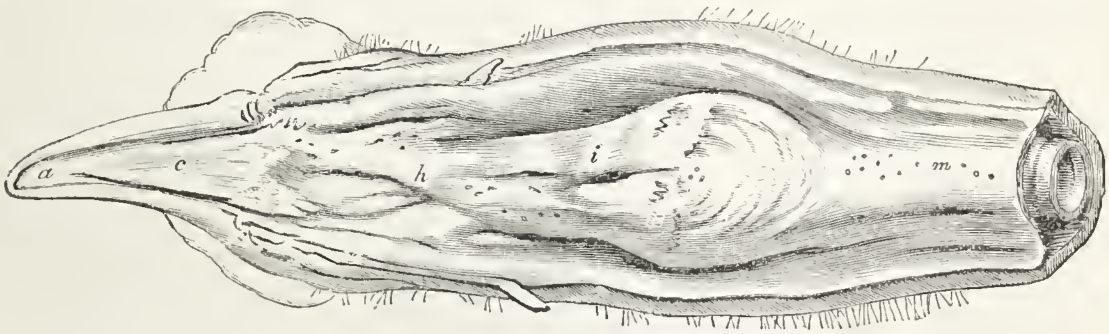


Fig. 9.—THE THROAT OF A FOWL, SHOWING THE PARTS *in situ*.

a, the Lower Mandible; *c*, the Tongue; *h*, *m*, interior of the Gullet; *i*, the Upper Larynx.

The SENSE OF TOUCH must be of very limited utility; indeed, there seems to be no part of the body of a bird so constructed as to be capable of tactile impressions. The wings, the representatives of hands and arms, are obviously entirely unfit for the exercise of such a function; neither do the legs and feet seem to be better suited to this purpose. The only organ of touch about which there can be no doubt is the bill, yet even this is generally covered with a hard sheath of horn. Nevertheless, in some races the extremity of the bill is soft and largely supplied with nerves. In snipes and woodcocks, for example, the sensitive extremity of the beak materially assists in procuring their food.

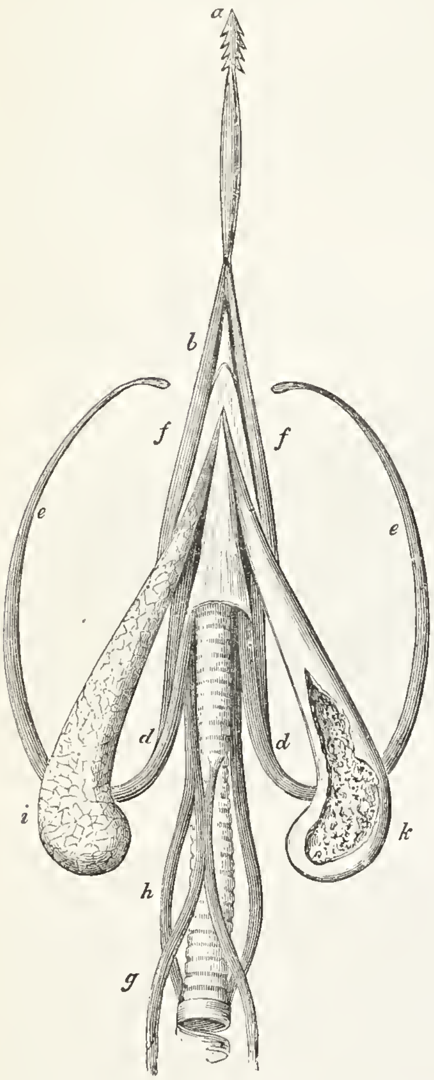


Fig. 10.—TONGUE OF THE WOODPECKER, SHOWING THE MECHANISM EMPLOYED FOR ITS PROTRUSION.

a, harpoon-like Tip of the Tongue; *d*, *e*, *f*, *g*, *h*, Framework of the Throat; *i*, *k*, Glands furnishing adhesive secretion.

For the systematic arrangement of the class of birds, the conformation of their feet has been found to afford characters of great importance to the ornithologist, inasmuch as the organisation of these members must obviously be in strict relation with the localities they inhabit. To account for the distribution of the feathered tribes, and to explain the relationships that exist between them and other animals, a great variety of ingenious theories have been broached, all of them more or less fanciful. The different families, sub-families, and minor groups into which they have been divided have been again and again sorted, like a pack of cards, frequently more in accordance with the whim of the player than with the established rules of the game. And yet a little reflection will show that the great principles of zoological classification are so simple, and at the same time so immutable, that we sometimes cannot but admire the ingenuity displayed in going wrong.

Few things are more manifest to the student of nature than that, in the distribution of the animal creation, it has been ordained that every locality shall be peopled by forms of life pre-eminently adapted for its occupation. If, therefore, we are asked whether birds ought to be arranged in circles or in squares, in hexagons or in pentagons, in groups of five or in groups of seven, our simple reply would be by inquiring how many localities could be pointed out as requiring appropriate occupants, and to this question it is not difficult to find a satisfactory answer.

The earth, the water, and the air, throughout their broad domains, must each of them be provided with inhabitants peculiarly constructed to live in their diversified regions. Upon the earth, we find the level ground, the mountain, and the glen; we find the pathless forests, and the solitary trees and shrubs, and bushy underwood. We cast our eyes upon the waters, and we see the world of ocean covering two-third parts of this great globe, stretching from pole to pole, rolling its mighty waves through every zone; we see the creeks and shallow bays that margin it all round, and watch the waves as they approach the shore and lay them down to sleep upon the beach. There are the rivers, too, and lakes, and swamps and marshes which are neither land nor water, sometimes overspread with floating vegetation, sometimes a broad expanse of ooze and rushes far too soft to bear the weight of creatures that might try to walk upon the treacherous surface. We look into the air, and there we find between the earth and sky abundant room for birds of every wing. If, therefore, with this little map of the world before us, we reply to the question propounded above, we should be tempted to say that there must necessarily be as many different types of organisation as there are districts therein enumerated; and doubtless a reference to any system of ornithology, however much the classification may be confused by preconceived theories, will convince us that such is essentially the foundation of any natural arrangement.

In taking, therefore, a brief survey of the principal groups, or ORDERS, under which the feathered races have been distributed, we will begin with those appointed to live on trees, inasmuch as these are regarded by the author of the following pages as being entitled to the highest rank in the class to which they belong, rivalling in intelligence, as some of them do, the apes and monkeys of which they are in general the inseparable companions.

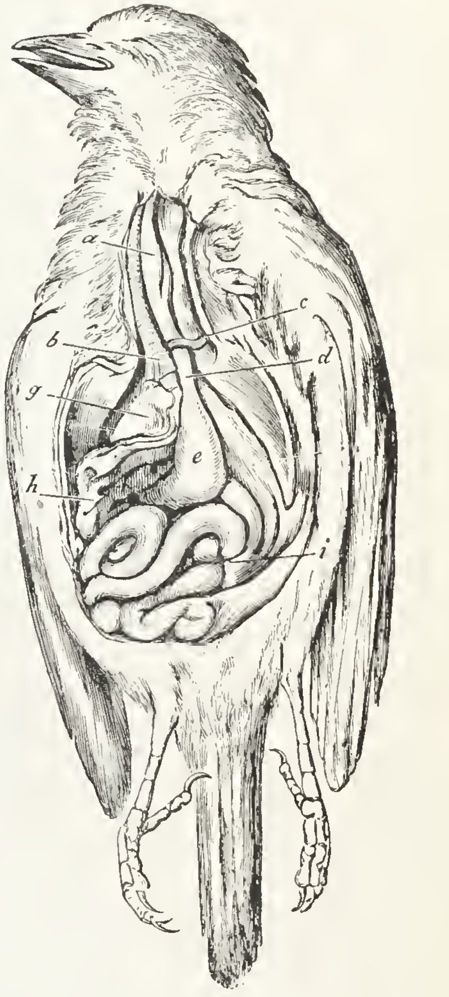


Fig. 11.—VISCERA OF SMALL BIRD (*Euphone violaceus*).

a, Crop; *b*, termination of the Windpipe, or inferior larynx; *c*, one of the Vocal Muscles; *d*, lower portion of the Gullet; *e*, the Gizzard; *g*, Lung of the right side; *h*, Liver; *i*, Alimentary Canal.

Few people in this country have any adequate conception of a tropical forest, and, consequently, are scarcely prepared to see whole races of animals constructed specially for a residence in the umbrageous wilderness within its pathless precincts. The great forest of the Amazon, in all its primeval grandeur, stretches for a thousand miles from north to south, and probably three or four hundred from east to west, and over all this vast extent of territory, so closely are the branches interwoven that, as we are told, a monkey might make his way passing from tree to tree without ever coming to the ground except at those points where the rivers hold their course through the tangled yet sublime scenery. "In these untrodden fastnesses the trees, rising frequently to a height of sixty or eighty feet, with stems perfectly straight and without a branch, give support to the huge creepers that climb around their trunks like immense serpents waiting for their prey, or sometimes stretching obliquely from their summits like the stays of a lofty mast, here twisting round each other till they form living cables, as if to bind securely the patriarchs of the forest; there wreathed in tangled festoons, and themselves covered with smaller creepers and parasitic plants." Such is Mr. Wallace's description of the interior of the Amazonian forest.

"The forests of Rio Janeiro," says Mr. Darwin, "are ornamented with the cabbage palm trees 110 feet high, with a stem so narrow that it might be clasped with two hands. The woody creepers themselves are of great thickness, some of them measuring two feet in circumference. If the eye was turned from the world of foliage above to the ground beneath, it was attracted by the extreme elegance of the leaves of the ferns and mimosæ (sensitive plants). The latter in some parts covered the ground; in walking across these thick beds, a broad track was marked by the change of colour produced by the drooping of their sensitive leaves. It is easy to specify the individual objects of admiration in these grand scenes, but it is not possible to give an adequate idea of the higher feelings of wonder, astonishment, and devotion, which fill and elevate the mind."

These are the localities amongst which species of the ARBOREAL ORDERS find their Paradise, and hold undisturbed possession. Myriads of climbing birds—parrots, macaws, and cockatoos—fill the whole atmosphere with joyful screams, deafening the very monkeys with their din; gorgeous toucans, with enormous bills and feathers dipped in flame, and woodpeckers scarcely less gaily clad, make the woods echo, as with axe-like beaks they chop their way in search of insect food.

The peculiar structure of the feet in the arboreal races is evidently adapted to a life amongst the branches of trees: the outer toe can be directed backwards like a thumb, enabling them to grasp the boughs as with a hand.

If, leaving the trackless gloom of the forest, we approach the sylvan scenery of the surrounding country, the "bosky woods" and isolated trees, or the sparse undergrowth of bushy shrubs, we find innumerable forms that have their feet contrived for *perching* only. These INSESSORIAL races, called also PASSERES, from their general resemblance to sparrows, live upon insects, fruit, and grain; but those with strong beaks live more exclusively upon grain, and those with slender beaks upon insects. The proportional length of their wings is as variable as their habits. They have four toes, generally so disposed that there are three in front and one behind; sometimes all four in front. Their legs are slender, and they hop rather than walk.

The forests and the trees, the bushes and the brakes, the thickets and the hedgerows, being thus provided with appropriate denizens, we turn our attention to the level ground; and here we find species as obviously designed for a terrestrial existence as were the preceding groups for a residence among the branches. The terrestrial or GALLINACEOUS birds live principally upon the ground. Their body is large and heavy, and their wings short and rounded, so as to be but ill adapted to prolonged flight. They have three toes in front, which are united at their base by a short fold of the skin, and their hinder toe is affixed above the level of the rest. In many species the male is provided with formidable weapons in the shape of *spurs*. To this order belong the turkeys, pheasants, and barn-door fowls. Their legs are thick, strong, and muscular, their toes short and powerful. They always prefer running to flying, and, indeed, will rarely take to their wings, except when compelled to do so by the urgency of the occasion.

If any doubt could be entertained as to the terrestrial character of the gallinaceous birds, there can be none whatever as to those distinguished by the name of CURSORES or runners. The principal characteristic of the cursorial race consists in the undeveloped condition of their wings, which are quite disproportioned to the size of their body. In some cases these rudimentary wings are but imperfectly furnished with feathers, and seem only to be used after the manner of sails, to catch the wind, and thus assist in running. The living species form two families, of one of which the Ostrich, and of the other the Apteryx, is the type.

Leaving the firm dry land, we next turn our attention to the marshes—the dubious confines between land and water—and here we find the order of WADERS, or, as they have been named on account of their long stilt-like legs, GRALLATORES or stilt-walkers. These birds, as their name imports, are characterised by the height of their legs, which are naked, and thus adapted for wading to a certain depth into the water, where many species catch their prey. A remarkable example is met with in this order of the facility with which difficulties, apparently insurmountable, in the adaptation of certain species to peculiar circumstances, have been encountered and overcome. In India, the tanks and ponds of considerable depth are more or less covered with the broad leaves of water-lilies and other floating vegetation. In such places, which are far too deep to be occupied by wading birds, and yet too extensive to be left without inhabitants, we find a family provided with toes so enormously lengthened, and moreover eked out by claws of such extraordinary length, that the spread of their feet extends over a very large surface, thus enabling them to walk over the floating weeds.

Another order of birds comprehends those whose feet are specially constructed for swimming, constituting a NATATORIAL TYPE; for this purpose they are placed far back upon the body, the legs are short and compressed, and the toes are united by a web. Their plumage is thick and shining, impregnated with oil, and closely packed with soft down, so as to preserve them from all contact with the water. They are the only birds the length of whose neck much surpasses that of their legs, thus enabling them, while swimming at the surface, to obtain their food at the bottom. Such are the DUCKS and SWANS, which are, moreover, further characterised by having their bill covered with a soft skin, and furnished occasionally at the sides with ridges and tooth-like points. The DIVERS, trusting to their superior powers of battling with the watery element, are met with further from the shore; while, at distances still more remote from land, daring the utmost fury of the tempestuous ocean, walking upon the waters, or riding upon the seas—

> "Up and down, up and down,
> From the base of the wave to the billow's crown,
> In the midst of the flashing and feathery foam,
> The Stormy Petrel finds *her* home."

Lastly, in this our rapid survey of the distribution of the feathered tribes, we have to speak of those whose element is the air. And here, perhaps, the reader may feel inclined to remark that, with the exception of the cursorial birds, such as the Ostriches and the Apteryx, all the species we have had occasion to mention are more or less capable of flight—that this is the special attribute of the whole class. Nevertheless, upon a little consideration, he will find that amongst the many races that fly well, there are some so pre-eminent in this respect that all others quail before them. It is one thing to be able to fly, and another to be furnished with wings so powerful that they never seem to tire. It is one thing to be the champion of the coppice, but another to be the tyrant of the sky!

The greatest powers of flight are of course conferred upon the rapacious birds, whose business is is to overtake and destroy their swift-flying prey. To enable them to do this, their wings are necessarily of the most perfect structure; and they may also be recognised by their feet, which are strong, and armed with formidable talons. Of the swiftness of the falcon we have spoken elsewhere; and any one who has witnessed the flight of the eagle is not likely to have forgotten so grand a spectacle; his movements are majestic, and as he sails above the clouds on outstretched wings he seems to feel himself the monarch of the scene around. And yet even the falcon and the eagle cannot, as regards their powers of flight, be looked upon as the most highly gifted of flying birds. The spread of wing of the frigate-birds measures ten feet from tip to tip, and their flight is so powerful that they are everywhere to be seen in tropical climates at immense distances from land; while the albatross has been known to fly around a ship for weeks together, exhibiting such indomitable strength of wing that it has been supposed to be capable of circling round the world.

It is by no means our intention to trouble the reader with unnecessary details concerning the anatomy of the creatures upon the history of which he is about to enter; nevertheless, it is indispensably requisite that we should give at least an outline of their internal organisation.

No one can have examined attentively the bony framework whereby the body of a bird is sustained, without being forcibly impressed with the lightness as well as the compactness of its construction. The most wonderful economy is exhibited in the arrangement of the weighty material of which it consists. The bones present in their interior extensive cavities, whereby they are considerably lightened, and their walls, although exceedingly dense and strong, are much thinner than in any other animals. The extremities of the cylindrical bones are occupied by a light open net-work of slender filaments shooting across in every direction from wall to wall, and as these attenuated buttresses are likewise hollow, it is easy to perceive how incomparably lightness and strength are here conjoined.

The extent to which the skeleton is thus filled with air varies in different birds in relation with their powers of flight. In the Swifts and the Humming-birds every bone of the skeleton, even to the toes and the claws, is permeated by the atmospheric fluid. In the opposite extreme, the terrestrial Apteryx and the aquatic Penguin have not a single bone thus excavated.

The skeleton of an animal formed for flight must be constructed upon mechanical principles of a very refined character. The utmost lightness is indispensable; nevertheless, in a framework which has to sustain the powerful action of muscles so vigorous, strength and firmness are equally essential. It is in combining these two opposite qualities that the human mechanician exhibits the extent of his resources and the accuracy of his knowledge; but let the best and most ingenious mechanic carefully examine the skeleton of a bird, and we doubt not that in its construction he will find all his ingenuity surpassed, and perhaps derive not a little instruction from the survey.

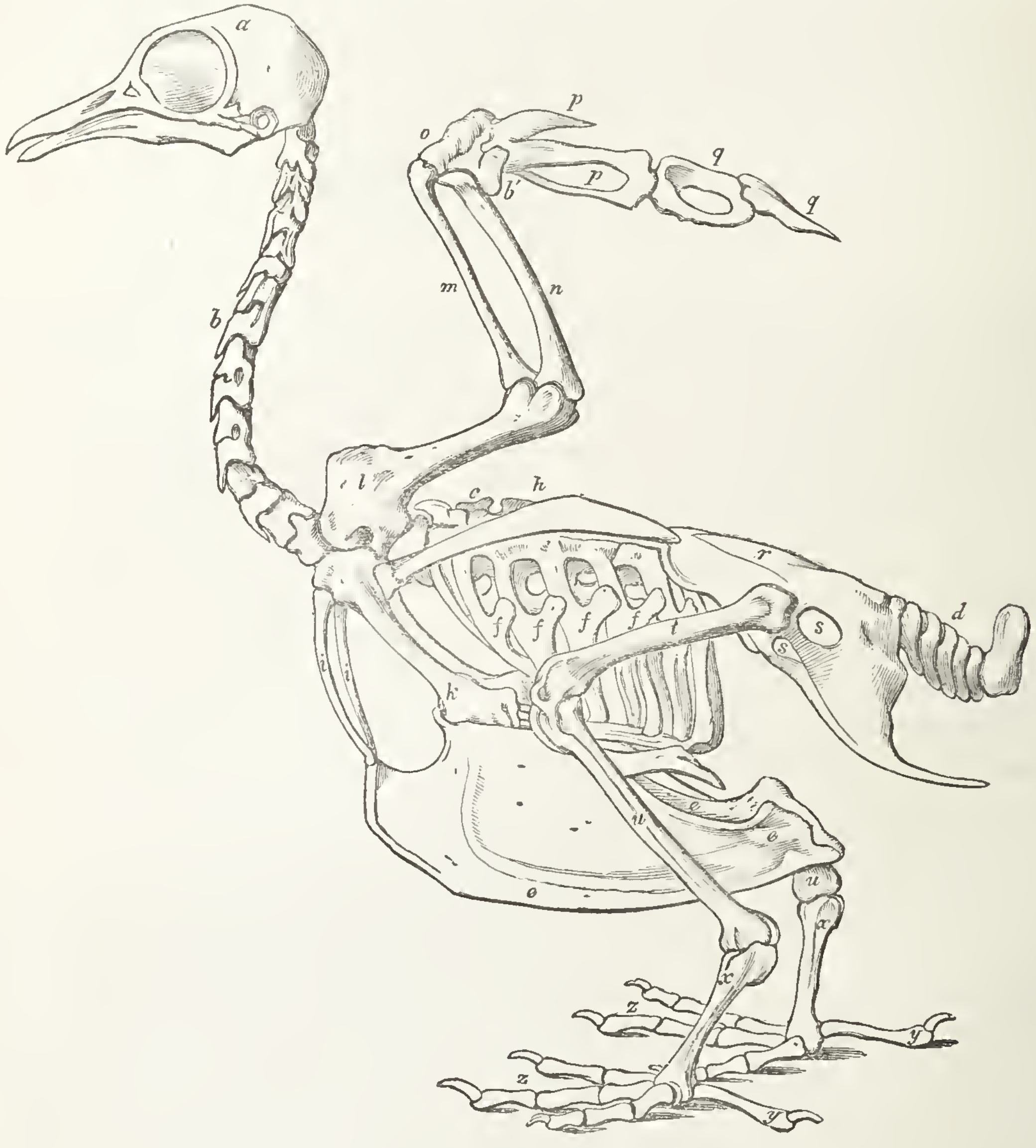


Fig. 12.—SKELETON OF A BIRD.

a, the Skull; *b*, Vertebræ of the Neck; *c*, Dorsal Region of the Spine; *d*, Vertebræ that support the Tail; *e*, *e*, *e*, the Sternum or Breast-bone; *f*, *f*, *f*, *f*, the Ribs; *h*, the Scapula, or Shoulder-blade; *i*, *i*, the conjoined Clavicles or Collar-bones, forming the Furculum, or "Merry-thought;" *k*, the Coracoid Bones; *l*, the Humerus, or Arm-bone; *m*, *n*, Bones of the Fore-arm; *o*, *b'*, Bones of the Wrist or Carpus; *p*, *p*, the Metacarpal Bones and Rudimentary Thumb; *q*, *q*, Pieces representing the Middle Finger; *r*, *s*, *s*, the Pelvis, formed by the consolidation of the hinder Vertebræ of the Back into one piece; *t*, the Thigh-bone; *u*, the Leg; *x*, *x*, the Tarso-Metatarsal Bones, usually called the Tarsus; *y*, the Hallux, or Hinder Toe; *z*, *z*, the Front Toes.

In order to render the following account of the structure of a bird's skeleton intelligible to the non-scientific reader, we have delineated that of the Pigeon, and with this figure before us we shall have but little difficulty in indicating those points with which it is essential that the reader of the present volume should be intimately acquainted. (See Fig. 12.)

In the back-bone, or vertebral column, we find three principal regions, each of which will merit distinct notice.

The *cervical region*, or that portion belonging to the neck (Fig. 12, *b*), is exceedingly variable in its proportionate length, and forms the only flexible portion of the spine; it performs, indeed, the functions of an arm, at the end of which the beak, the chief instrument of prehension, is situated. The number of vertebræ entering into the composition of this part of the skeleton is very variable; in the Swan there are as many as twenty-three, in the Crane nineteen, while in the Sparrow there are only nine. As a general rule, it may be observed that the neck of a bird is never so short as not to be able to reach to every part of the body; in many aquatic species it is remarkably elongated, whether they swim upon the surface by means of webbed or natatory feet, like the Swan, or wade into rivers and marshes, like the Crane or the Heron. Throughout the entire class a very beautiful contrivance is observable in the S-shaped curvature of this region, the joints of the upper vertebræ being so disposed that they will bend forwards, while in the lower part they can only be bent backwards, thus enabling the bird to lengthen or shorten its neck with the utmost facility and gracefulness.

But if flexibility is thus admirably provided for in the cervical region, in the thoracic portion of the skeleton which has to support the framework of the wings, and sustain the efforts of the powerful muscles connected with flight, firmness and rigidity become essential requisites, and, accordingly, in the dorsal region, every means has been employed to prevent those movements which in the neck are so advantageously permitted. The vertebræ of this region (Fig. 12, *c*) are therefore so consolidated as to be almost immovable; and, moreover, splints of bone laid along the back materially add to its stability and strength. There are likewise two sets of ribs, one firmly lashed to the backbone, the other strongly attached to the sides of the sternum; these dorsal and sternal ribs are moreover united to each other by firm connections, and a thorax is thus formed, possessing sufficient mobility to perform the movements connected with respiration, but still affording a strong basis for muscular action; nay, still further to strengthen this part of the skeleton, from the hinder margin of each dorsal rib a broad flat plate of bone (Fig. 12, *f*) is prolonged backwards, so as to overlap the rib next behind, and thus bind the whole together as firmly as possible.

The sternum or breast-bone (Fig. 12, *e*) is developed in proportion to the size of the three pectoral muscles subservient to flight, and is prolonged beneath into a deep keel-like projection. In the cursorial races, such as the Ostriches and the Apteryx, whose wings are not available for flying, the keel is entirely wanting.

Whoever considers the position of the hip-joint in the skeleton of a bird, and reflects how far it is necessarily removed behind the centre of gravity when the bird walks with its body in a horizontal position, will at once perceive that the hinder portion of the spinal column, having to support the whole weight of the body under the most disadvantageous circumstances, and at the same time to give attachment to the strong and massive muscles that wield the thigh, must be consolidated and strengthened in every possible manner, and that even the slight degree of movement permitted in the region of the back would here be inadmissible. Most of the hinder vertebræ are, therefore, solidly conjoined into a single piece (Fig. 12, *r*, *s*), sufficiently strong and massive to bear the great strain to which it is continually subjected, leaving only a few of the hindmost pieces (Fig. 12, *d*) free, upon which the feathers of the tail are supported

The fore limb of a bird, although used for the purpose of flight, when stripped of the feathers and quills that, as we have already seen, form the extensive surface of the wing, will be found very much to resemble the human arm in its general arrangement, presenting only such modifications as are required for the performance of its peculiar function.

The framework of the shoulder consists of three bones (Fig. 12, *h*, *i*, *k*), named respectively the *scapula* or *shoulder-blade*, the *clavicle* or *collar-bone*, and the *coracoid bone*. The scapula (*h*) is a long and comparatively slender piece placed upon the ribs, and embedded in the muscles, to which it gives attachment. The coracoid bone (*k*) is the strongest piece of the shoulder; it supports the wing at one extremity, while at the opposite it is firmly united to the sternum by a broad and massive joint. But the most peculiarly formed part of the shoulder is the *furculum*, or "merry-thought," as it is usually called (*i i*), consisting of the two collar-bones united, so as to form but a single fork-shaped apparatus, the presence of which materially enlarges and strengthens the shoulder, without unnecessarily adding to the weight. It is by the union of the three last-mentioned bones that a place is made for the socket of the shoulder, with which the wing is more immediately connected.

The skeleton of the wing presents the bone of the arm, called the *humerus* (Fig. 12, *l*), and the two bones of the fore-arm, named respectively the *radius* (*m*) and the *ulna*, or *cubit* (*n*). The *wrist*, or *carpus*, consists of two bones (*b' o*), and the metacarpus (*p*) is likewise made up of two pieces; these, with two, or sometimes three, rudimental fingers (*p' q q*), complete the framework of the wing. The largest finger consists of two, or sometimes of three joints; a second offers but a single joint; and the third, when present, is a mere appendage to the carpus, representing a sort of apology for a thumb.

The bones of the leg likewise exhibit the same parts as exist in the human skeleton, but modified. The *thigh*, or *femur* (Fig. 12, *t*), is a short and strong bone, to which succeeds the leg, consisting of two bones (*u*), named the *tibia* and the *fibula*, but the latter is generally very imperfectly developed. That part which is commonly considered to be the leg consists of the bones of the ankle and a part of the foot (the tarsal and metatarsal bones) consolidated into a single piece, called by anatomists the *tarso-metatarsal* bone, but known to ornithologists as the *tarsus* (*x*). At the lower extremity of the tarsus are three joints that support the three front toes (*z*, *z*), while a fourth toe (technically called the *hallux*) (*y*), which is directed backwards, is attached to it by the intervention of a small accessory piece. In the gallinaceous order there exists a bony spur, considered by some as representing a fifth toe.

In order to facilitate the description of a bird, it is usual for the ornithologist to consider its exterior as being mapped out into sundry *regions* (see Fig. 13), to each of which has been assigned a definite and appropriate name; with the names of these regions, and their precise application, it is requisite that the reader should be intimately acquainted.

A bird, like any other vertebrate animal, is divisible into the head, the body, and the limbs; under one or other of which divisions all subordinate parts may be classed.

The head consists of the *skull* and the *bill*, and is joined to the body by the *neck*. Commencing with the bill, we see that it is composed of two pieces, corresponding to the jaws of quadrupeds; that which is above is called the *upper mandible* (Fig. 13, 1), that which represents the under jaw is called the *lower mandible* (2). The upper mandible contains the *nostrils* (3); its highest part is called the *culmen* or *ridge* (4), while the corresponding ridge of the lower mandible is called the *gonys* or *keel* (9).

The lateral edges of the mandibles which meet when the bill is closed are called the *margins*. In some birds the margins of the upper mandible fold over those of the lower, while in others the edges meet; when this is the case, the line of junction between the two is called the *commissure* (5).

In many birds the upper mandible is continued far back over the forehead, and there dilated, so as to form a *casque* or *helmet*. In rapacious birds and parrots there is a belt of soft naked skin at the base of the upper mandible, named the *cere*, in which the nostrils are placed, while around the eye is a space, often denuded of feathers, called the *ophthalmic* region (14).

The HEAD is that part which lies immediately over the skull, extending from the base of the beak to the commencement of the neck. The *front* or *forehead* (12) is that part of the head which lies close above the nostrils; then follows the *crown* or *summit* (17), which occupies the middle or centre of the head, forming that part which is usually occupied by the crest in birds so ornamented. The *hind head* (18) commences at the declivity of the skull; its lower portion is called the *nape* (19).

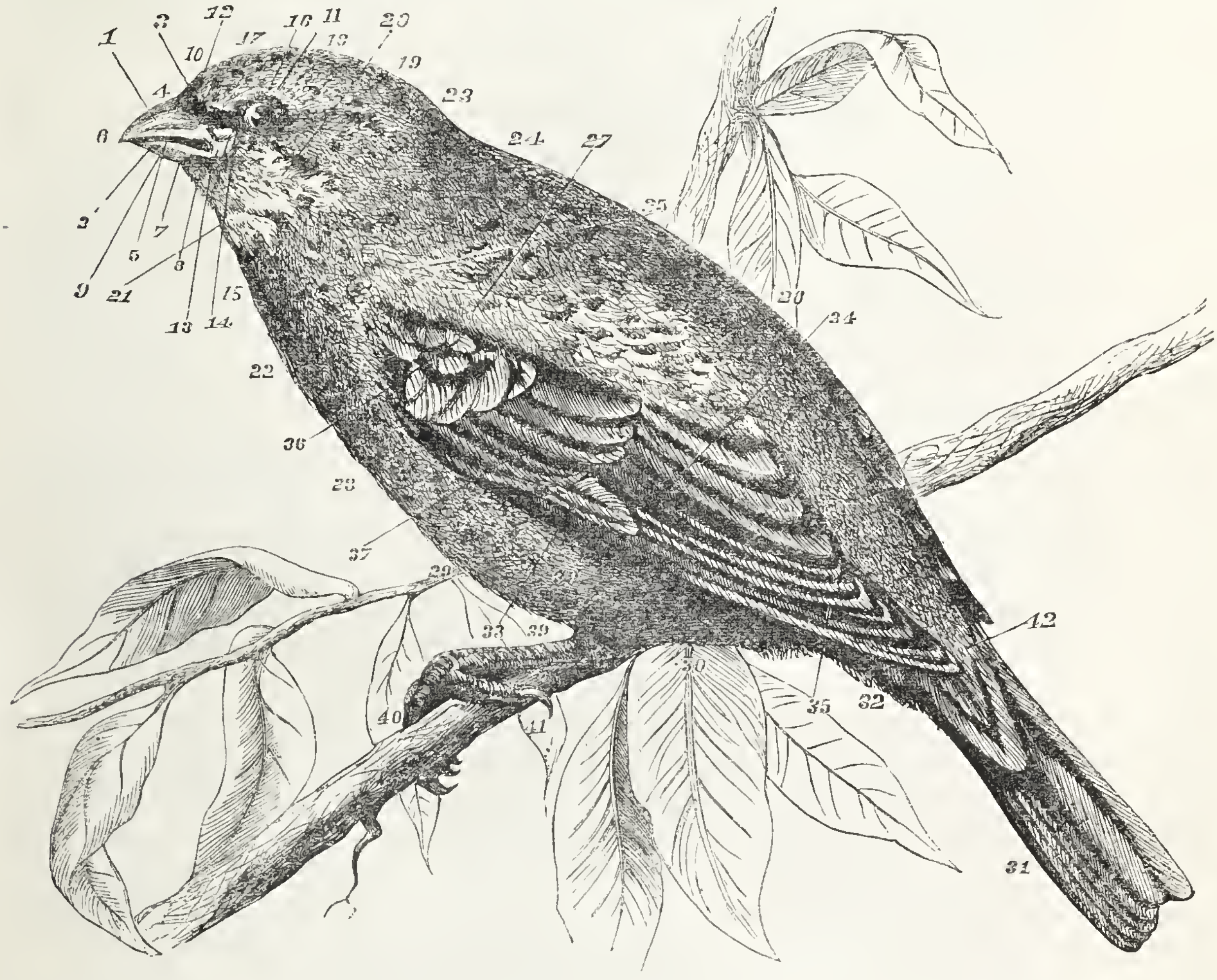


Fig. 13.—ORNITHOLOGICAL REGIONS OF THE BODY OF A SMALL BIRD.

1. Upper Mandible.
2. Lower Mandible.
3. Nostrils.
4. Ridge, or Culmen.
5. Commissure, or cutting edges of the Mandibles.
6. Apex, or point of the Beak.
7. The Chin.
8. Upper Throat.
9. Keel, or Gonys.
10. } Coloured Bands, usually
11. } called Bridles and Stripes.
12. The Forehead.
13. The Gape, or Rictus.
14. Space around the Eye.
15. Lower Throat.
16. Superciliary Region.
17. Crown, Summit, or Vertex.
18. Hind Head, or Occipital Region.
19. The Nape, or Nucha.
20. The Ear, or Ear-feathers.
21. The Throat.
22. The Breast.
23. The Neck above, or Upper Neck.
24. The Back, or Mantle.
25. Scapular Wing-covers.
26. Lower Back, or Tergum.
27. The Shoulder.
28. Body, or Lower Breast.
29. The Belly.
30. The Vent.
31. The Tail Feathers.
32. The Under Tail-covers.
33. Spurious Quills.
34. Secondary Quills, or Secondaries.
35. Primary Quills, or Primaries.
36. The Shoulder Margin.
37. Wing Covers.
38. Under-surface or Under-part of the Body.
39. The Tarsus, or Leg.
40. The Front Toes.
41. The Hinder Toe, or Hallux.
42. Upper Tail-covers.

On the sides of the head the following parts have received distinct names:—The feathers that cover the ears, to save repetition, are usually called the *ears* (20): they are generally rather more rigid and their webs more disconnected than the surrounding feathers. The space between these and the corner of the mouth (usually called the *gape*) (13), is termed the *cheek*.

The parts of the NECK are thus designated:—The back of the neck is called the *upper neck*, or *nucha* (23), beneath which is the *lower neck* or *auchenium*. The under-side of the neck is divided into three regions; first, there is the *chin* (7), or that small space just beneath the lower mandible; to the chin succeeds the *upper throat* (8), between which and the broad part of the body is the *lower throat* (21).

The BODY presents the following regions: first there is the *breast* (22), which extends over the space which covers the breast-bone. To this succeeds the *belly* (29), which is terminated by the *vent* or *erissum* (30). Immediately behind the vent are the *under-tail covers* (32), which are frequently of a different colour from the surrounding feathers.

On the upper aspect of the body we have the *interscapular region*, sometimes called the *back* (24), to which succeeds the *lower back* (26), which terminates at the *rump*, or that part where the *upper-tail covers* (42) are inserted.

Last of all comes the TAIL, composed of long stiff feathers, called the *tail-feathers* (31), concerning which it is only necessary to observe that the two middle tail-feathers are the *intermedial*, while those on the sides are the *lateral* tail-feathers.

The WING of a bird will be found to present a structure worthy of our highest admiration. The object aimed at in the arrangement of its different parts is evidently to obtain a very large and firm expanse of surface, by employing the smallest possible quantity of material. For the purposes of flight it is obviously necessary that the superficial extent of the wings shall be sufficiently ample, not only to sustain the weight of their possessor in the thin and yielding element in which it flies, but, by the vigour of their stroke and the violence of their impulse, to propel the bird with a rapidity proportioned to the occasion, and, moreover, by the lightness of their touch and the accuracy of their movements, to steer and steady its course through all the varied evolutions whereby it is enabled to capture prey, or sportively display the wonderful activity conferred upon the feathered tribes.

We have already seen, while examining the construction of the skeleton, that the bony framework of the wing essentially resembles that of the human arm, and that the limb when stripped of its feathers is no more adapted for flying than our own. The needful expansion is obtained altogether by the addition of the quill feathers, which, as explained in a preceding page, combine in their structure all the qualities requisite for the intended purpose, lightness, firmness, strength, elasticity, and extent of surface: the central part of the arm or wing forms merely a basis of support, into which the quills and other appendages to the wing are securely implanted. It will therefore be easily understood that the importance of the individual quills as instruments of flight will depend very much upon the position they hold in the wing, of which they form so considerable a portion, and, consequently, that they have received names expressive of their relative efficiency. Those that are affixed to the bones representing the hand (Fig. 12, *p*, *q q*), by the length of their stroke, and the peculiarity of their arrangement, are obviously of primary importance, both from their size and the situation they occupy, and have consequently been named the "*primaries*," or the "*primary quills*," (Figs. 2, *f*; 13 35); they might be called with equal propriety the "*hand-quills*," a term more particularly expressive of the parts to which they are attached. Upon the relative length and other proportions of the primary quills the shape and mechanical power of the instrument principally depend; if the first primary be the longest, the termination of the wing is sharp and pointed (*acuminate*), as in most birds that are remarkable for the swiftness of their flight; whereas if the second, third, or fourth of these quills should exceed the others in this respect, the wing becomes more and more rounded (*obtuse*), and the perfection of its action visibly deteriorated.

The "*Secondary Quills*," or "*Secondaries*" (Figs. 2, *e*; 13, 34), are exclusively sustained by the bones of the fore-arm (Fig. 12, *m*, *n*); from their situation being much nearer to the shoulder-joint

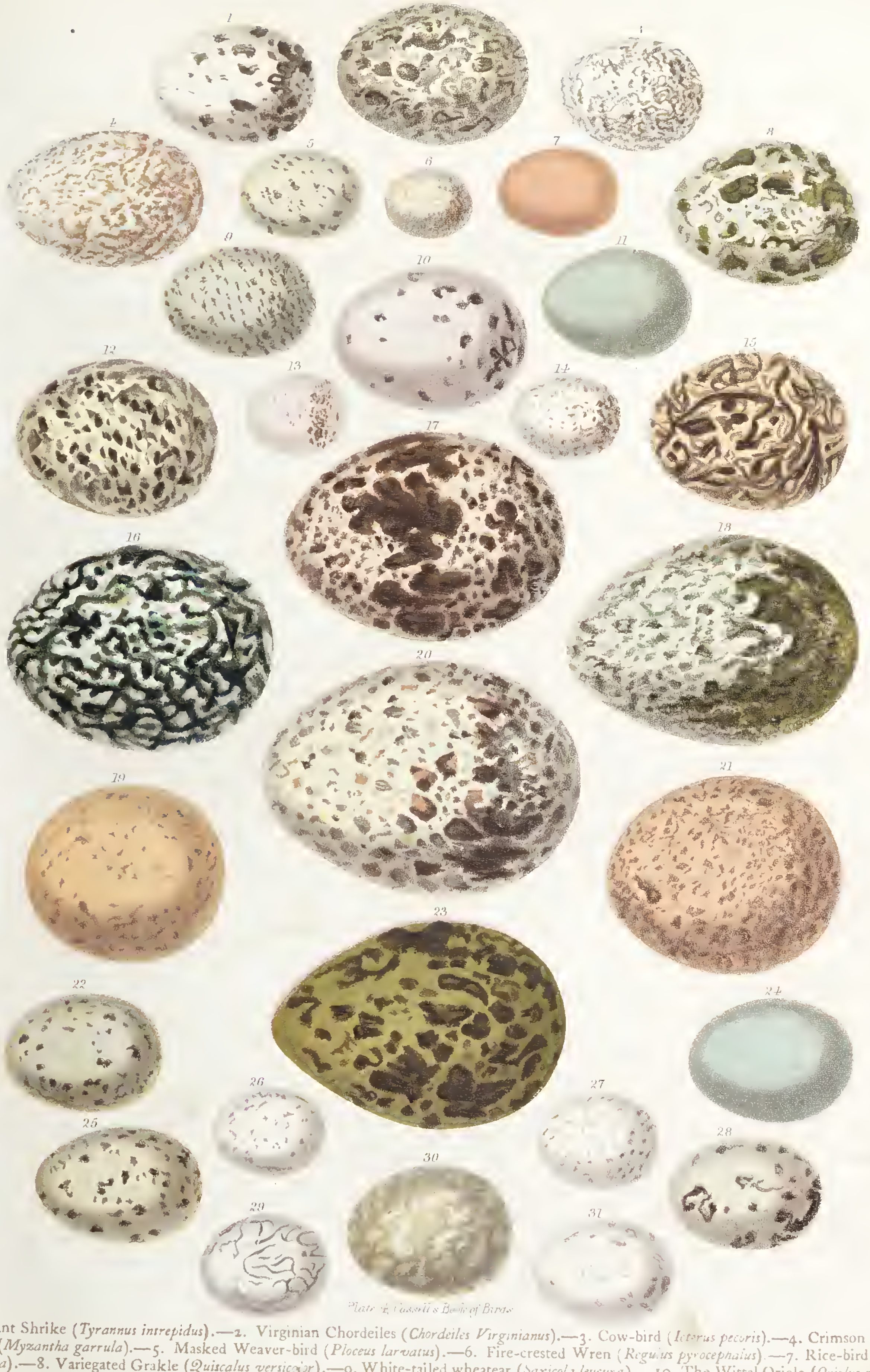


Plate 4. Cassell's Book of Birds

1. Tyrant Shrike (*Tyrannus intrepidus*).—2. Virginian Chordeiles (*Chordeiles Virginianus*).—3. Cow-bird (*Icterus pecoris*).—4. Crimson Honey-sucker (*Myzantha garrula*).—5. Masked Weaver-bird (*Ploceus larvatus*).—6. Fire-crested Wren (*Regulus pyrocephalus*).—7. Rice-bird (*Padda oryzivora*).—8. Variegated Grakle (*Quiscalus versicolor*).—9. White-tailed wheatear (*Saxicola leucura*).—10. The Wittal Oriole (*Oriolus galbula*) —11. The Alpine Accentor (*Accentor Alpinus*).—12. Nordman's Glareole (*Glareola Nordmanni*).—13. Alpine Tit (*Parus Alpinus*).—14 Crested Tit (*Parus Cristatus*).—15. African Parra (*Parra Africana*).—16. The Piririguan Tick-eater (*Crotophaga Piririgua*).—17. Ptarmigan (*Lagopus Scoticus*)—18. Scapulated Crow (*Corvus Scapulatus*).—19. The Kestrel (*Tinnunculus Cenchris*).—20. The Senegal Thick-knee (*Oedicnemus Senegalensis*).—21. Rock Kestrel (*Tinnunculus rupicolus*).—22. Corythus (*Corythus enucleator*).—23. The Red-legged Stilt-Walker (*Himantopus rufipes*).—24. The Stone Thrush (*Turdus saxatilis*).—25. The Silk-tail (*Bombycilla garrula*).—26. Long-tailed Tit (*Parus biarmicus*).—27 The Wall-creeper (*Tichodroma muraria*).—28. The Troopial (*Agelaius phœniceus*).—29. The Yellow Bunting (*Emberiza Cia*).—30. The Red-eyed Coccyzus (*Coccyzus erythopthalmus*).—31 The Cirl-Bunting (*Emberiza cirlus*).

than the preceding, the extent of their sweep is more limited, and their stroke much feebler; they are, consequently, as their name indicates, of secondary importance in locomotion.

The *Spurious*, or *Bastard Quills* (Figs. 2, *e*; 13, ^{33}), are attached to the rudimental bone that represents the thumb (Figs. 2, *g*; 12, *p*); their size is diminutive, and their use in flight comparatively unimportant.

The *Wing Covers* or *Coverts* (Fig. 13, ^{37}) are small feathers arranged in several rows, which overlap and strengthen the bases of the quills; they are often variously coloured, and thus afford important features whereby different species may be distinguished. Besides the above, there are certain conventional terms employed by the ornithologist that will require enumeration. The arm-part of the wing in the living bird is generally known as the *shoulder* (^{27}); the elbow-joint is the *flexum*; while that part of the fore-arm which corresponds to the edge of the wing is denominated the *shoulder-margin* (^{6}).

The names appropriated to the different parts of the hinder-limb have been already sufficiently indicated when describing the composition of the skeleton.

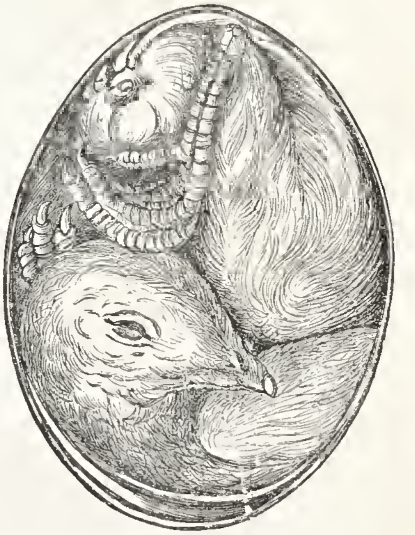


Fig. 14.—CHICKEN IN THE EGG, NEARLY ARRIVED AT MATURITY, Showing the little Hammer or "Bill-scale" on the end of its beak, wherewith it is enabled to break through the egg-shell.

There are many birds which have stripes of variously coloured feathers situated above, before, and behind the eye; while others sometimes occur at the base of the lower mandible. To all these distinct names have been appropriated. A *superciliary* stripe is situated *above* the eye, occupying a position analogous to that of the human eyebrow. An ordinary eye-stripe is either *anterior*, *posterior*, or *entire*. It is called *anterior* when it only occupies the space between the eye and the bill; *posterior* when it commences behind the eye, and advances towards or unites with the ear-feathers; and *entire* when it is both posterior and anterior. A *maxillary* stripe commences at the base of the under mandible, and descends on the sides of the neck.

Such is the by no means very long list of names of parts used by the ornithologist in his description, and which in the course of the present volume will necessarily be of very frequent occurrence.

The oil with which birds preen their feathers, and the glands that supply it, constitute a remarkable provision peculiar to the feathered creation. Embedded among the feathers at the root of the tail, there is on each side a small nipple, yielding upon pressure a butter-like substance, which the bird extracts by squeezing the orifice with its bill. By means of the oil, or rather ointment, thus procured, it dresses its feathers, either for the purpose of increasing their brilliancy, or, as in the case of the swimming birds, to make them impenetrable to wet.

The pairing of birds is a feature in their history which draws a broad line of distinction between the feathered tribes and the generality of quadrupeds. Among mammiferous quadrupeds the young derive their nutriment during the earlier period of their existence entirely from the maternal breast, the male parent contributing nothing towards its support; but in the winged races the callow brood derive their supply of food from the industry of both parents, whose united exertions are not more than is requisite to procure the needful supply. In this circumstance we may see a reason for the faithful love of the feathered mate as contrasted with the vagrant disposition of the quadruped. The parental fondness of birds towards their young has escaped no observer; no historian of nature is silent upon this subject. "How well they caress them," says Derham, "with their affectionate notes, lull and quiet them with their voice, put food into their mouths, cherish and keep them warm, teach them to peck and eat, and gather food for themselves, and, in a word, perform the part of so many nurses deputed by the Sovereign Lord and preserver of the world to help such young and shiftless creatures."

It would lead us far beyond the limits of our space were we to do more than indicate the close relationship that exists between the exalted temperature and warm clothing of the feathered creation and the wonderful instinct which urges them to build nests for the reception of their eggs, or the still more remarkable blind perseverance with which they devote themselves to the task of incubation. "There is nothing," says Paley, "either in the aspect or in the internal composition of an egg which could lead even the most daring imagination to conjecture that it was hereafter to turn out from its shell a perfect living bird. From the contents of an egg would any one expect the production of a feathered goldfinch? To suppose the female bird to act in this process from a sagacity and reason of her own is to suppose her to arrive at conclusions there are no premises to justify." And yet HE who made the egg not only ordained that such should be the result of the simple process of incubation; but, as though to confound scepticism, by giving, as it were, the last touch to HIS inscrutable work, provided the young bird with the means of escaping from incarceration, by attaching to the end of its beak a little hammer, called the "bill-scale," the only use of which is to crack the egg-shell, and allow the little prisoner to come forth. (See Fig. 14.)

With these few prefatory remarks, we leave our author in the reader's hands, at the same time promising that he will find in the succeeding pages a rich store of valuable information.

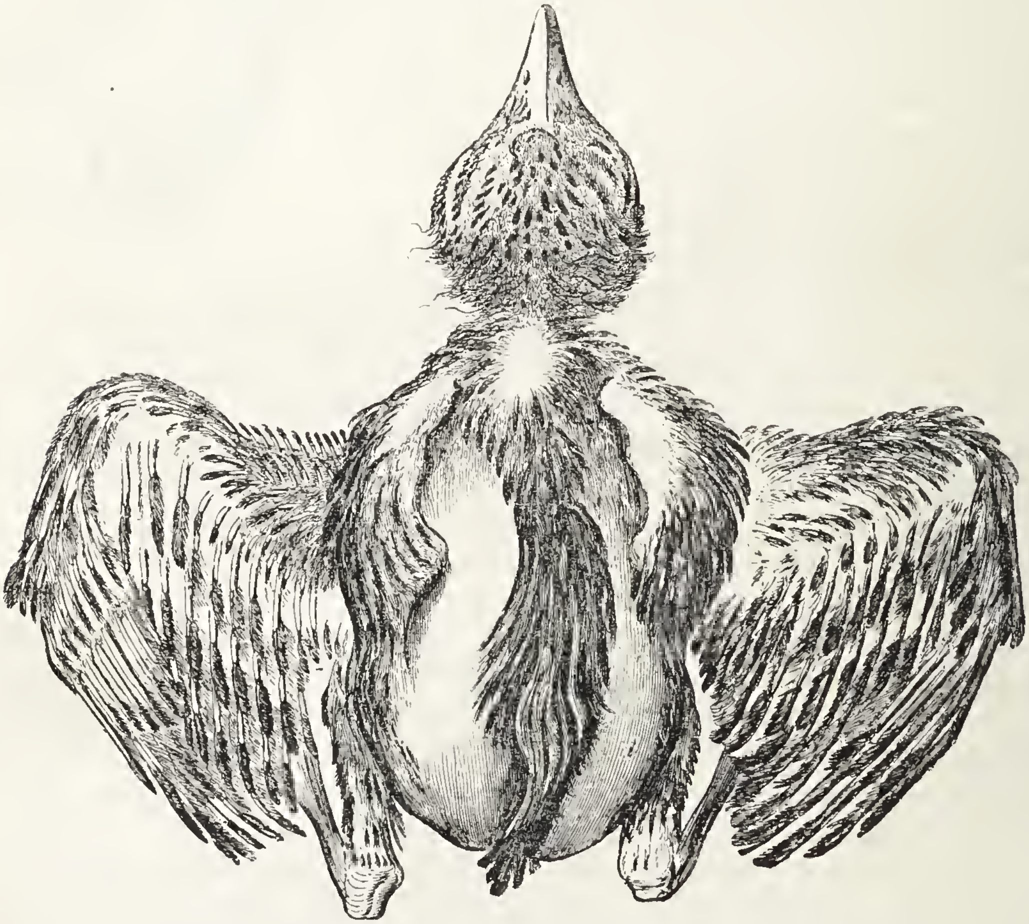


Fig. 15.—A YOUNG BLACKBIRD SHORTLY AFTER ITS ESCAPE FROM THE EGG, SHOWING THE ARRANGEMENT AND CONDITION OF THE FEATHERS.

CLASSIFICATION OF BIRDS.

Those who are familiar with modern works on ornithology will have observed that it is usual to commence the history of the feathered tribes by a description of the vultures—the most disagreeable and least intelligent of the race. Some writers, however, consider the singing birds as entitled to the first place, the remaining members of the heterogeneous multitude being arranged according to the pleasure of individual naturalists more or less acquainted with their subject. For our own part, we recognise in the parrots the qualifications most fitted to entitle them to take the precedence, and it is, consequently, with these that we shall commence our history. Ornithologists, moreover, differ widely among themselves as regards the relation that exists between the parrots and other members of the class to which they belong, either placing them in a group by themselves, in a manner never intended by Nature, or associating them with toucans, woodpeckers, and cuckoos, with which they possess but few characteristics in common. Under these circumstances, we have considered ourselves at liberty to adopt our own views upon the subject, and have, accordingly, constituted for the parrots a distinct order, under the quaint but expressive name of

CRACKERS (*Enucleatores*),

in allusion to the facility with which, owing to the construction of their beaks, they are enabled to crack nuts, and other hard seeds, that form the usual staple of their food.

The order that we have thus thought it advisable to establish is, however, by no means limited to the parrots; it includes various other seed-eating birds, chiefly belonging to the passerine tribes, the resemblance of which to parrots has been in some cases generally acknowledged in selecting the names ordinarily conferred upon them. Thus, the Cross-bills have long been known in Germany as the Fir-tree Parrots, and, on the other hand, the epithet of Sparrow-parrots, applied to some races of climbing-birds, clearly shows the relationship that exists between these generally dissevered groups.

The birds thus associated will be found to present many features in common. They live chiefly upon vegetable substances, and their strong beaks enable them to break up hard kinds of food, such as nuts, seeds, and grain. They will also eat fruit and leaf-buds, or the tender shoots of plants; many will devour insects; and a few do not altogether reject the flesh of other animals. They are all clever, lively, and active, much attached to the society of birds of their own species, though they do not often cultivate acquaintance with those belonging to a different family. Their great intelligence enables them to live comfortably even under disadvantageous circumstances, and their temperament allows them to fight the "battle of life" very cheerfully. Owing to the diversity of their habits, they are necessarily widely distributed, and some of them are to be met with in every climate; the parrots only are restricted to the torrid zones, the remaining members of the order being citizens of the world. As to the localities they frequent, much depends upon the absence or presence of the trees to which they usually resort, by far the greater number being strictly arboreal, passing their whole lives in flying from tree to tree, and confining their excursions to a very limited district. Only such as live in cold countries migrate; indeed, regular migrations—that is to say, such as take place at stated periods—or journeys to any considerable distance, are quite exceptional among them. They are, in general, very affectionate and docile; the male has frequently but one mate during his whole life, and nearly all of them brood more than once in the year.

The nests of this order of birds are of very various construction, and the number of eggs never large. The task of incubation usually devolves upon the female, who is cheered and tended by her mate during the period of her seclusion, but he also occasionally shares her labours, and both parents co-operate in feeding and taking care of their young. Many species are considered inimical to mankind, on account of their marauding attacks upon property; and yet the benefits they confer far outweigh any injuries of which they may be guilty. They clear away the seeds of noxious weeds, free the plants from insects; and their lively and cheering presence in the woods, their beauty, their song, and the ease with which they are tamed, together with other good qualities, fully entitle them to our admiration and regard. The flesh of most of them affords an appetising and healthy food, and the plumage of some species forms a beautiful and admired decoration.

PARROTS (*Psittacini*).

If it is ever permissible to compare animals of one class with those of another, we would state our opinion that the parrots hold among birds much the same position as that occupied by monkeys among quadrupeds. The truth of this remark will become obvious as we proceed with their history. Most systematists have considered parrots as entitled to take but an inferior place in the zoological series, founding this opinion upon a single characteristic which they share with many other birds of far humbler endowments; we allude to the prehensile structure of the foot. Parrots, Woodpeckers, Pepper-eaters, Curacus, Barbets, and Jacamars, are all climbing birds; that is to say, they all have two toes placed in front and two directed backwards; and, immaterial as this structure of the foot may appear, it has been deemed a sufficient reason for forming an order embracing several races of most dissimilar form, which present only this one feature in common. Little stress should, in reality, be laid upon this disposition of the toes, from whatever point of view it is regarded, seeing that Woodpeckers, Tree-creepers, and a great number of others that do not possess the scansorial foot, vie with the so-called climbing birds in the facility with which they climb. The three-toed Woodpecker is not inferior in the dexterity with which it can use its claws to any four-toed scansorial species; and we shall, we believe, be giving this climbing foot its proper appreciation if we compare it to and rank it with the flexible tail of some mammalia, the possession of which is not confined to any particular race, but bestowed alike upon arboreal species of the most various kinds. A foot of this description is by no means of such uniform structure as is usually supposed, and, in truth, is scarcely less varied than are the birds themselves; the foot of the parrot, in particular, differs essentially from the pair-toed foot of other Scansores, in the development of the central part, which renders it in its functions comparable to a hand. The parrots, in fact, constitute a distinct and very clearly defined race, their most distinguishing characteristic being found in the structure of their beak, which can never be mistaken for that of any other bird. At the first glance, indeed, the beak of the parrot would appear to resemble that of the birds of prey; but it is, in reality, much thicker and stronger, and also comparatively higher and more symmetrical in its form. The legs are thick, strong, and fleshy, but never long; the tarsus much shorter than the middle toe, and always covered with small scaly plates; the toes are moderately long, and have a thick sole, but this exists only on certain peculiar ball-like elevations; upon their upper surface the feet are covered with minute scales, resembling those of the tarsus; and these scales, as they approach the ends of the toes, become gradually larger, and project beyond the base of the claw upon the terminal joint in the shape of short tubular or band-like plates;

the claws are not long, but much bent and tolerably sharp, never very powerful. The structure of the wings is in exact correspondence with that of the feet; the bones are of moderate length, but strong; the pinion feathers tolerably numerous—twenty to twenty-four. The compactly formed primary quills are seldom long, but so disposed that the outspread wing is generally pointed; the tail-feathers vary considerably in different species, both as regards length and shape. The general plumage is remarkable on account of its compactness; it consists of few feathers, but these are usually of large size, with the exception of those covering the head, which are small. The eye is in many instances surrounded by a naked patch of skin, which during life is usually powdered over with white dust. The body feathers are each furnished on the under side with a large downy appendage. The coloration of the plumage, notwithstanding its great diversity, will require notice, as presenting a feature very distinctive of the different races of parrots. The prevailing tint is a more or less vivid leaf-green; but we also meet with hyacinth, blue, purple, red, golden yellow, and at times darker hues; their distribution is also characteristic, more especially the frequent occurrence of complementary colours upon the upper and under sides of the same feather—blue-violet, dark blue, light blue or green above, with light yellow, orange-yellow, cinnabar red, or purple underneath. Not less peculiar is the frequent concealment of glowing tints among others which are less conspicuous, as, for example, in the case of some Cockatoos in which we meet with feathers having their lower portion and their downy roots of a deep cinnabar red or brilliant yellow, and yet this portion is seldom visible, on account of the length of the white feathers among which it is hidden.

The extraordinary intelligence exhibited by some parrots is particularly remarkable; it is, indeed, their sensible behaviour, not their form, that makes us regard these creatures as representatives of the Quadrumana. The parrot has, superadded to the form of a bird, all the qualifications and troublesome propensities of the monkey—humoursome and fickle at one moment, gentle and agreeable at the next: it is intelligent, active and circumspect, provident and crafty, very quick in discernment, and possessed of an excellent memory; on this account it is eminently susceptible of instruction, and may be taught almost anything. On the other hand, it is choleric, malicious, spiteful, and deceitful; it forgets injuries as little as it does kindnesses; it is cruel and inconsiderate to creatures weaker than itself, tyrannically ill-treating the helpless and unfortunate, as does the monkey. It has been the fashion to rank parrots as inferior to many other birds, because they do not exhibit such conspicuous capabilities of locomotion; they are, nevertheless, very well endowed, even in this respect. The larger species fly with apparent heaviness, but with considerable rapidity; the smaller, wonderfully well—so well, indeed, that we have been almost consoled for the loss of a favourite bird whilst watching the beauty of its flight. Very many appear to be quite out of their element when upon the ground, they seem to hobble rather than to walk, but there are some Ground Parrots that run swiftly and with much facility; and Gould makes mention of a Grass Parrot that he saw running upon the ground like a plover. The capability of hopping from bough to bough is an accomplishment in which parrots are deficient, nevertheless they have their own mode of progression among the branches; any considerable space they fly over, but smaller distances they pass by climbing, and that with considerable rapidity, unwieldy as some of them appear; helping themselves along by means of their beak, as well as their feet, while other birds use their feet only. Parrots are unable to swim, and are quite incapable of diving. The bill is far more movable than that of any other bird, and is useful for many purposes. Their voice is harsh and screaming, but yet not entirely destitute of an agreeable sound when heard in their native haunts. Some species will learn to whistle tunes with remarkable clearness and accuracy; the faculty which they possess of imitating the human voice and speech is well known—their performance, indeed, is wonderful; they do not babble, they speak, and seem to know the meaning of the words they use.

With the exception of Europe, parrots are to be met with in all parts of the world, more especially in tropical regions; one American species ranges as far north as 42°, and another is found in the southern hemisphere, as far as the inhospitable wastes of Tierra del Fuego, in 53° south latitude. Cockatoos are known to inhabit New Zealand and Macquarrie's island, 52° south. In Asia and Africa, the parrots are principally confined to the limits of the torrid zone; in China, they rarely pass 27° north latitude, and in India, at furthest, only extend to the foot of the Himalaya mountains. In Western Africa, they rarely go beyond 16° north, and in Eastern Africa, according to our information, not further than 15°; but towards the southern hemisphere they probably are to be met with at a greater distance from the equator.

Generally speaking, the woods are their favourite haunts; but this is by no means universally the case. There are certain species, for example, which only frequent tree-less plains or wide steppes; in the Andes some are to be found living far beyond the region of trees, even at an altitude of 11,000 feet above the level of the sea.

In the north-east of Africa, according to our own experience, they almost exclusively reside in places frequented by monkeys, insomuch that apes and monkeys seem to be their inseparable companions. The more extensive the forests—that is, the richer they are in vegetation—the more these birds abound; indeed, in the tropical forests, they constitute a large—we might almost say, the largest—proportion of the feathered inhabitants. The same remark applies to Australia, as well as to many localities in India, and in part also to Africa; in these countries parrots are as numerous as crows are in Europe, and as common as sparrows.

They would seem to understand how to make themselves conspicuous; and while they deafen the ear with their discordant cries, enliven the dark shades of tropical forests with their lavishly-coloured plumage. "It is impossible," says Gould, "to describe the enchanting scene afforded by certain parrots, more especially by those adorned with feathers of glowing red, as they wheel their varied flight among the silver-leaved gum-trees of Australia, their gorgeous plumage standing out amid the surrounding scenery with wonderful effect."

"Morning and evening," writes Schomburgk, "countless multitudes may be seen at a considerable height, making an insufferable noise; one afternoon I saw such a prodigious flight descend upon the trees by the river-side, that the branches bent low under the weight of the birds." "It is necessary to have lived in these countries, more especially in the hot valleys of the Andes," says Humboldt, "to believe it possible that the shrieking of the parrots actually drowns the roar of the mountain-torrents as the waters leap from rock to rock. What would those wondrous tropical forests be without parrots? Lifeless gardens of enchantment, a wilderness of silence, a solitary desert; by these birds they are awakened and kept alive, for the parrots know equally well how to find occupation both for the ear and eye of the traveller."

Except in the breeding season, parrots live in society, or, we might rather say, in great flocks; they select a locality in the forest as their settlement, and thence make daily excursions to considerable distances. Early in the morning they simultaneously quit their roosting-place, to invade the same tree or the same field in search of food, stationing sentinels, whose duty it is to protect the community from a sudden surprise. They pay instant attention to any voice of warning, and when alarmed, immediately take flight, either all together or shortly after each other.

"At the first glimmering of the clear morning sun of the tropics," says the Prince von Wied, "the parrots rouse themselves from their sleeping-places, dry their wings, which have become wetted with the dews of night, and playfully call aloud to each other; then, after describing many sweeping circles above the high woods, they quickly depart in search of the morning's meal. In the evening they invariably come back again to their usual roost."

Le Vaillant tells us that in south-eastern Africa the native parrots fly in little flocks in search of food, bathe about noon, and hide themselves among the foliage during the overpowering heat of the sun. Towards evening they disperse themselves, after which they again bathe, and then fly back to the same roosting-place from which they had departed in the morning. These roosting-places are very various—sometimes the thickly-leaved top of a tree, sometimes a rock full of holes, often a hollow tree trunk; the situation last mentioned seems to be especially sought after. "Their sleeping-place," says Audubon, speaking of the American parrakeets, "is a hollow tree, or the hole chiselled out in some tree's trunk, to be the nestling-place of the larger woodpeckers, that is, in case these are not occupied by their true owners. In the gloaming large flocks of parrots assemble around old hollow sycamores, or other trees of similar character; and may be seen immediately in front of the entrance clinging to the bark, until one after another they disappear through the hole that leads into the interior, in order to pass the night. When a hollow of this description is not sufficiently large to accommodate the numbers that are assembled, those that come last are content to suspend themselves by their bill and claws from the bark before the entrance.

We have ourselves, in the primitive forests around the Blue River, in Africa, repeatedly watched the parrots at twilight, slipping one after another into their hole, and have observed them ranged with great regularity around the many perforations in the trunk of some old Adansonia.

In India, the Collared Parrot, as Layard informs us, sleeps among the thickets of bamboos. "All Parrots, Bee-eaters, Grakles, and Crows from districts extending for many miles around, pass the night in flocks among the great bamboo plantations, where the dull rushing sound caused by their flutterings, constantly heard from sundown till dark, and from the first grey dawning in the east until long after sunrise, might almost be supposed by the observer to proceed from numerous steam-engines in full work. Many of these flocks returning late in the evening from their excursions, fly so near to the ground that they scarcely clear the obstacles to their course; indeed, they do not always succeed in doing so; for, several nights together, we have picked up parrots which had flown against walls or similar obstructions, and had been killed in consequence."

Layard gives a very lively account of the behaviour and doings of the Alexander parrot (a species commonly met with in Ceylon), at one of their sleeping-places.

In Chilau, he relates, that he has seen such massive flights of these birds winging their way to their roosting-places among the cocoa-nut trees that overshadow the market-place, that their cries completely drowned the Babel-like confusion of tongues heard among the buyers and sellers in the streets. He had previously been told of the flocks which thus pay their nightly visits, and placed himself, accordingly, towards evening, upon one of the neighbouring bridges, in order to form a calculation of the numbers that might make their appearance in a certain given direction. At about four o'clock in the afternoon they began to arrive; scattered swarms were seen wending their way homewards, to these there succeeded others still more numerous, and in the course of half an hour the homeward stream was apparently in full flow. He very soon found that it was impossible even to count the flocks, which seemed gradually to unite into one great living, roaring torrent. Some flew high in the air, until they were immediately over their roosting-place, and then suddenly plunged down, wheeling round and round towards the tree-tops, of which they were in search. Others crowded onwards, flying close to the ground—indeed, so closely that some of them nearly grazed his face. They swept along with the rapidity of thought, and their dazzling plumage seemed to be lit up with gorgeous brilliancy, as it glanced in the rays of the sun. He waited at his post of observation until the evening closed in, and he could see no longer, but even then the flight of the birds as they made towards their nests was audible. When he fired off a gun, they rose with a sound like that of a furiously rushing wind; soon, however, they again settled down, and commenced an indescribable

COCKATOOS (*Cacatua*).

hubbub. The shrill screams of the birds, the noise caused by the fluttering of their wings, and the rattling of the leaves of the palm-trees was so deafening, that he was heartily glad when he escaped from such a turmoil, and took refuge in his own house.

Next to a safe sleeping-place, the presence of trees thickly crowned with foliage is an essential requisite for the comfortable lodgment of parrots; this they require, not so much as a protection against the weather, as for a secure hiding-place. Of all things they like warmth, nevertheless they do not absolutely avoid a cool temperature, and still less are they afraid of wet, at least for a time.

COLLARED PARROT (*Palæornis torquatus*).

"During the heavy tropical rain-storms that sometimes darken the air," says the Prince von Wied, "it is not uncommon to see parrots sitting motionless upon the dead branches at the very top of a tree, uttering cheerful screams, as the water streams off from their plumage; there may be dense foliage, and thick boughs immediately beneath, under which they might easily find shelter, but they prefer the warm shower, and seem to enjoy the wetting. No sooner, however, has the rain ceased, than they appear equally desirous to dry themselves, and to rid their plumage of the moisture."

In fine weather it is quite otherwise; they then decidedly prefer the shelter of the thickest trees, either as a protection from the burning heat of the sun, or for the purpose of concealment, and hasten to them at once on the slightest alarm. They know what an excellent protection to them, clothed as they are in leafy green, the verdant bower offers; and, truly, when thus ensconced, they are tolerably secure from observation; a man may know that there are fifty of them in a tree, and not see one. In playing their game of hide and seek, both the colour of their feathers, and the cunning so peculiar to all parrots, contribute to their safety;—they do not want to be seen. One of their company has just at the right time observed the approach of an enemy; he gives a sign, they are all at once silent, and withdraw themselves towards the centre of the tree; noiselessly, they climb to that side of the summit opposite to the spot where the enemy has appeared, they then fly off, and it is only when they are a hundred yards away that they seem to recover their voice, and scream to their hearts' content, apparently rather out of bravado, after having thus outwitted their pursuers, than for the sake of calling upon their companions. This clever game they play more especially when they have settled on some tree for the purpose of enjoying the fruit, as it is then that their thievish design is carried out with the greatest cunning. "Whilst on the wing," says Pöppig, "the large golden green Araras of the Andes will arrest their flight to come down upon the scarlet Coral trees (*Erythrinæ*) and the yellow *Tachiæ*, the heads of which they eagerly devour. Their cry is positively fearful; nevertheless, they are quite clever enough to understand that it would be dangerous to give utterance to it when they are just about to plunder some ripening field of Indian corn. At such a time, every one of them will repress its inclination to make a noise, giving utterance to no sound except a sort of murmur, with which it accompanies its proceedings, as it prosecutes its work of destruction with surprising quickness. "The sportsman, or even the exasperated Indian, finds it by no means an easy task to surprise the thieves, seeing that two of the oldest birds are always set as watchmen upon the highest trees in the neighbourhood. The first note of alarm is immediately answered by a general, half-uttered cry from the assembled pilferers; the second is responded to by deafening screams, raised by the whole flock as they fly away, and it is only when their enemy has departed that they begin anew their destructive raid."

The presence of a numerous flock of parrots is generally only betrayed by the empty husks that rattle as they fall against the broad leaves of the bushes, producing a sound that can be heard from some distance.

Le Vaillant has noticed the silence of these birds at the approach of a suspicious-looking visitor, on the occasion of their mid-day assemblages. They will keep themselves so still that not the slightest sound can be heard to proceed from among them, even though thousands should be congregated together. On the discharge of a gun, the whole multitude will immediately take wing, and rise into the air with deafening cries, as though rendered furious by the interruption.

Far different is their conduct when they have become aware that the good-nature of man leaves them unmolested. In India, as Jerdan informs us, they not only come boldly into the towns, but will settle down, without the slightest shyness, upon the tops of the houses, and from this elevation descend to plunder the gardens and fields in the neighbourhood. Incredibly great, and justifying the most efficient means of defence on the part of man, is the destruction caused by parrots; nothing is safe that is not constantly guarded. Like the monkeys, they waste a great deal more than they eat.

The multitudes which assemble upon the fields or fruit trees devour all they can upon the spot, bite off still more, and carry a few ears of corn up into the trees, in order peaceably to fill their much craving stomachs. When they make their appearance in the orchard, they search every tree that is in fruit, and pluck such as may be ripe; bite a bit off, and if it does not exactly suit their very refined taste, throw it down upon the ground and take another instead. While feeding they generally climb the branches from below upwards, and as soon as they get to the top fly away to another tree, sweeping over the ground without ever moving their wings. Arrived at this second tree they recommence the work of destruction just as before.

In North America and in Chili they attack the fruit before it is ripe, in search of the as yet milky pippins, and we may imagine the damage thus caused. According to Audubon, the cornstacks in the fields are sometimes the objects of their attack; they will hang upon them, and draw the ears out of the sheaves, thus sparing the owner the trouble of threshing. Some prefer one kind of seed and some another; but all agree in spoiling everything that man sows or plants for his own use; and on this account anything like friendship between the farmer and the parrots is quite out of the question.

After having satisfied their hunger in this manner they go in search of water to drink; and, according to Audubon and Schomburgk, do not refuse salt, or at any rate brackish water. Besides occasional rain-baths, they will bathe in lakes, washing themselves, Le Vaillant tells us, until they are soaked through, as with a heavy rain. We also learn from Audubon that they enjoy playing in the sand like fowls, covering their plumage with dust, and will creep into king-fishers' holes, in order to find it. They are fond of salt ground, and are always to be found near the saltworks in the forests.

The incubation of these birds takes place during the months that correspond in their native lands to our spring. The larger kinds appear to lay but once in the year, and then only two eggs; though the Australian Grass Parrot and some others are exceptions to this rule, inasmuch as they will lay regularly from three to four eggs, and in some cases from six to nine, twice or even three times during the year. The eggs are always white, smooth, and round. Holes in trees are the favourite nesting-places of these birds, but not exclusively so; some American kinds will lay in holes in the rocks, and the Indian parrots in crevices in old buildings, pagodas, monuments, or houses.

Audubon assures us that several females will lay in one hole; but we consider this as very doubtful, though it is true that parrots prefer breeding in society, sometimes even associated in immense flocks.

Molina speaks of a large settlement of these breeding birds in Chili, and Pöppig of another, probably of the same species. " These several settlements," says the last-mentioned naturalist, " must be very astonishing to those to whom they are new. Fancy yourself, about mid-day, wearily approaching a precipice, believing yourself to be perfectly alone, that deep silence reigning around you that always indicates noon in these tropical regions, when all animals seek repose in sleep; a kind of growling strikes your ear, but you look in vain for any creature that could produce it; suddenly you hear the parrots' cry of warning, answered by many others, and before you are awake to your true position, are surrounded by swarms of these quarrelsome birds, flying about in a close circle, and in evident anger, threatening to strike you. From all the innumerable holes upon the face of the rocks little round heads are protruding, looking comical enough; and those that do not come out unite their screams to the general uproar. Every opening indicates a breeding hole, that has been excavated by its owner in the clay met with between the strata of the rocks. At times many hundreds may be counted."

These colonies are always so cunningly situated, that it is impossible for a beast of prey to approach them. Such settlements could not be made in the woods, as the trees would not afford a foundation strong enough to sustain their weight.

In general, it is in old trees that parrots make their nests; in Central Africa the Adansonia is preferred, more especially should it grow on the outskirts of a forest. We once saw a group of monkey-bread trees in the Kordofanian steppes inhabited in this manner, although not yet covered with their leaves.

As it is not always possible to find a trunk whose interior has been hollowed by some friendly woodpecker, the parrots are often forced to excavate their own nesting-places, and then it is that they show what an available instrument their beak can be. It is the female who almost, but not exclusively, makes the hole; at this work she shows herself most skilful; she hangs, like a woodpecker, from the bark, and gnaws, rather than cuts away, one shred after another, until the dwelling is completed; this labour often occupies several weeks, but with patience the end is at length attained. The hole is the principal matter, the nest does not need much making; a few chips picked from the ground are all that is required as a bed on which to deposit the eggs; even a hole that leaves much to be desired in the way of convenience will content these very easily satisfied parents. "From the white stem of a Trimi-palm," says Pöppig, "I once saw a brilliant light blue tail depending; it betrayed the Yellow Arara, who was busy with her strong beak enlarging a woodpecker's hole, out of which her ell-long tail hangs whilst brooding." The female generally sits alone, and is fed and entertained by her mate during the whole time of incubation.

Among the smaller kinds of these birds, the brooding season lasts from eighteen to twenty, and with others nineteen, twenty-three, or twenty-five days.

The young are perfectly helpless when they leave the egg, but their growth and development is rapid. At first they are very imperfectly fledged, but in from five to six days the feathers begin to sprout, and they open their eyes within eight or ten days of their birth. The warbling Grass Parrakeet leaves the nest thirty-three days after being hatched, and may be seen flying about two days later. Both parents feed the young and tend them for some time after they have left the nest.

The food, if corn, is softened in the parent's crop before it is put into the beak of the young bird. Schomburgk tells us that a pair of parrots which had settled near his encampment in the wood, only fed their young twice in the day, once at eleven in the forenoon and again about five in the evening. As soon as they arrived they perched upon a branch near the hole, and if they fancied themselves watched would sit quite still, until they thought that a favourable opportunity occurred for stealing in unobserved.

The parents are by no means deficient in tender care for their progeny, and will shield their offspring from danger with most self-sacrificing courage. Some species will attach themselves with great tenderness to deserted birds; not merely to those of their own family, but to any helpless orphan, even although belonging to another species.

Cunningham tells us that the surgeon of the *Triton*—a ship plying between England and Australia—had a Blue Mountain Parrot, and a very beautiful smaller one, that he had taken from its nest so young that it was unable to feed itself. Under these circumstances the elder bird undertook to give it food, and watched over it with the greatest anxiety. The mutual friendship of these creatures seemed to increase as time went on; most part of the day was spent in caresses; they trimmed each other's feathers, and the old bird would spread her wings over her little charge with every indication of solicitude. Indeed, their affectionate demonstrations soon became so noisy that they had to be separated, in order that the passengers might not be annoyed, and the young one was placed in a cabin with several others.

After a two months' separation the elder parrot succeeded in escaping, and was guided to the cabin by the voice of its young protégé, to whose cage it clung. From this time the friends were not parted, but a fortnight later the young one died, in consequence of a wound caused by a fall. Its friend was silent from that hour, and did not long survive its little charge.

Parrots attain their full beauty of plumage, and commence laying by the time they are two years old; some of the smaller kinds breed within the first twelve months, but, notwithstanding this, live for many years, and have been known to long survive the family in which they passed their youth.

In countries where parrots abound they are destroyed with unrelenting perseverance, and this simply for the protection of property. "People must not imagine," says Audubon, "that all the injuries they are guilty of meet with no reprisals; on the contrary, these birds are slaughtered in great numbers during their predatory visits to the farmers. Armed with his loaded gun, the exasperated proprietor creeps amongst them, and brings down eight or ten at the first shot; the survivors rise screaming into the air, fly about in circles for three or four minutes, but return, and surround the bodies of their fallen companions, uttering loud cries, and this is repeated again and again, until so few remain that the farmer does not think it worth while to waste his powder and shot upon them. Hundreds are thus destroyed in the course of a few hours, and baskets filled with the spoils."

Various are the expedients adopted for their destruction in different parts of the world. The Chilians rush out with all speed when they see the parrots settling, and attack them with sticks. The Australians rouse them from their sleeping-place, and then throw their boomerangs amongst the retreating flock. Adventurous men let themselves down the rocks in which the South American species breed, to draw the young out of their holes with hooks; or shooting parties and hunters endeavour to steal upon them unawares. When it is found impossible to climb the trees on which they breed, these are cut down, and nets and limed twigs placed around to catch the young. The flesh of the slaughtered birds is often eaten, although hard and tough, or is made into excellent soup.

Very frequently they are sought for on account of their splendid plumage. "There is nothing more natural," says the Prince von Wied, "than this most simple and pleasing decoration, to the use of which savages are much addicted; and very beautiful are the articles made from feathers by entirely untaught tribes; many of the aborigines of Brazil particularly excelled in this kind of work." The love for parrot feathers is very ancient. "In long forgotten times," says Pöppig, "the inhabitants of the tropical forests brought arara feathers as tribute to the Incas, for the decoration of their palaces, and early historians inform us that these feathers and the 'Koka' were the only produce which led to the peopling and cultivation of the formidably hot districts in which they abound."

It is said that Alexander the Great brought tame parrots from India, and in later times these birds were taken in great numbers to Rome, where the favour in which they were held was carried to such excess that it was often reproved in the open forum. "Oh, unhappy Rome!" cried that severe censor Marcus Portius Cato; "have we lived to see the day when our women nurse dogs upon their laps, and our men go about with parrots on their hands?" The Romans kept them in cages made of silver, tortoise-shell, and ivory, and had tutors who particularly taught them to utter the word Cæsar; in those days the price of a parrot that could speak exceeded that of a slave. Ovid did not consider it beneath him to sing their praises, and Heliogabalus thought he could not set anything more delicate than parrots' heads before his guests. In Nero's reign, it would seem, only Indian species were known; but probably at a later period African parrots were introduced.

During the Crusades these birds adorned the houses of the rich, and the first discoverers of America found tame parrots in the huts of the natives. Von Schomburghk tells us, that in their native lands, when tame, they are allowed to fly about, without having their wings clipped. "I saw many," he writes, "which joined the flocks that were flying over the village during the day, and returned to their master's hut at night."

In comparison with such a life as this the parrots brought to Europe have a sad fate; but they suffer most before their destination is reached. The Indians inhabiting the primitive forests capture them in order to exchange them for European articles, and hand them over to some sailor in the nearest harbour, who knows nothing either of the necessary food or of the care they require; not more than half the number that are shipped survive the long sea voyage, and many of those that reach Europe in safety perish in the dark, dirty, pestiferous shops of the dealers. It is only when the bird receives especial attention that its fate is ameliorated; but by that time it has often become distrustful, violent, and ill-behaved, and only loses these rude ways after long care and kind treatment; it is, however, very quick, soon learns to adapt itself to its altered position, and becomes accustomed to all kinds of diet. At first hemp or canary seed is acceptable, but after a time the parrot grows more dainty, and if supplied with sweets becomes such an epicure that any less delicate food is distasteful; it is easily habituated to almost anything that man enjoys, even to tea, coffee, wine, or beer, and will quite intoxicate itself with strong drink. These remarks do not apply to the little Australian Ground parrot, which refuses everything except grass seeds and the leaves of plants. Most of the larger kinds enjoy hemp-seed, hard-boiled rice, ants, maize, lettuce, cabbage, fruit, small kinds of millet, canary-seed, and the leaves of plants; such food as this keeps them well and thriving. Bitter almonds and parsley, according to Küle, are poisonous to these birds.

Many degrees of intelligence are observable among the members of the Parrot tribe, and the same species often contains individuals of very varied capabilities; but the memory of all is generally excellent. As regards teaching them to speak, the most important point to be attended to is that they should at first be kept closely confined and constantly instructed; any extent of freedom may, however, be accorded when their education is nearly completed. On the contrary, should the owner desire the parrot to breed, a certain amount of liberty is needful. For this purpose the first requisites are space, quiet, and a suitable tree for the nest. A tolerably roomy chamber in which they may live throughout the year, and the trunk of a hollow tree with convenient holes, the wood being of a soft kind, afford all that is necessary in these respects.

The classification of parrots is particularly difficult, on account of the great number of species, and it is almost impossible to indicate distinct boundaries between the different families. It will, however, answer our present purpose to arrange them under the general titles of TRUE PARROTS (*Psittacinæ*), MACAWS (*Arainæ*), LORIES (*Lorinæ*), COCKATOOS (*Cacatuinæ*), and GROUND PARROTS (*Pezoporinæ*), all of which differ from each other more or less in their habits and modes of life.

THE TRUE PARROTS (*Psittacinæ*)

are inhabitants of the woods, only leaving them to linger on their outskirts, and from thence to contemplate the tempting fields of fruit, upon which from time to time they make a raid. Many of them never quit their dense forests, whilst others of the smaller kinds prefer the less shady trees or open country.

These birds belong to Africa and the neighbouring islands, and also to various islands in the Pacific Ocean; they are likewise met with in great numbers in South America. The family is very rich in species; we shall, however, only select a few from the many, seeing that the mere description of their plumage would be wearisome, and we scarcely possess any information with regard to their mode of life in their native haunts. There can be no hesitation in placing the "JAKO," the GREY, or RED-TAILED PARROT (*Psittacus erithacus*) first upon the list, for it may be considered as the type of the race; it is true that it has neither the quickest flight nor the gayest plumage, but it combines in itself that equal excellence of all the attributes of a parrot which gives and will retain for it a pre-eminence among its congeners.

THE JAKO.

The Grey Parrot exhibits only two colours in its plumage. The tail is of a deep Cinnabar red, and all the other feathers are ash-grey or greyish blue, bordered with a lighter shade; near the head and neck the light borders of the feathers are somewhat wider than elsewhere. The beak is black, the eyes light brown, the bare places round the latter of a whitish colour. The male and female do not differ in hue, and but little in size, the male being the largest; its average measurement is twelve inches in length and twenty-five inches across the wings, the tail three inches and a half, the wing from shoulder to tip eight inches and a half; when folded, the wing extends some lines beyond the tail.

Very little is known of these birds in their wild state, although they are brought to Europe in far greater numbers than any other species. We learn from Heuglin that the habitat of the Jako extends from the western coast of Africa, deep into the heart of that continent, and reliable naturalists have seen it in great numbers in Wan and Bongo, up to 8° north latitude. It does not appear to penetrate further east, and is quite unknown in eastern Soudan; how far north and south it is found is at present doubtful. It is worthy of remark that these birds were not many years ago imported from Guinea to Madagascar, where they became naturalised and increased so rapidly, that at the commencement of the eighteenth century their numbers rendered them a perfect scourge to the inhabitants of the island of Bourbon and the Mauritius. The Grey parrot is one of the most highly-prized of our domestic favourites, and well merits the esteem in which it is held. Its praises have been sung in all languages, and every work on natural history relates some anecdotes of its surprising cleverness.

Perhaps the most celebrated of the species is one which lived for many years in Vienna and Salzburg, and luckily found an exact and industrious observer of its performances.

The Count Courcy Droitaumont was the first who, in the year 1835, in Oken's "Isis," gave us such particulars of its attainments as awakened astonishment in all quarters. This account has been attested by the late possessor of the parrot, President Kleimayrn, at the wish of Lenz, who afterwards published the following narrative:—"Jako noticed and criticised everything that passed before him, gave the proper answer to a question, did as he was bidden, saluted people who entered the room, and made his adieux to those who were taking leave; he wished you good morning and good night at the proper times, and asked for food when he was hungry.

"He called all the members of the family by name, and preferred some of them to others; if he wanted me (his master), he called out 'Papa, come here,' and whatever he said, sang, or whistled, was done as a human being would do it. There were times when he seemed inspired like an improvisatore; his voice then sounded like that of a speaker heard from a distance, when too far off to enable you to understand the words.

"Sometimes he would be marvellously polite—'Good morning, reverend sir!' 'An almond, if you please, reverend sir!' 'Do you want an almond?' 'Should you like a nut?' 'Shall I have some food soon?' 'Have you got something?' Occasionally he would threaten—'Be off, you rascal; are you going home or not?' 'Be off, you thief, or wait till I come!' 'You idiot!' 'You clown!' At times he was self-complacent—'Good little prattler!' 'You are an excellent little parrot!' 'Take time, neighbour, take time!' &c. If any one knocked at the door he would call very loudly and distinctly (just like a man) 'Come in! Come in, Herr B.!' 'What orders have you?' 'I am your humble servant!' 'I am delighted to have the honour! quite delighted to have the honour!' Or he would tap on his cage and say the above to himself.

"He could imitate the cuckoo excellently. Occasionally his conversation was rather discursive.

'Look out!' 'Come out!' 'Come up!' 'My dear little parrot!' 'Bravo, bravissimo!' 'Are we not going to dinner?' 'Let us go to the window!' 'Hieronymus, stand up!' 'I am going!' 'Long live the Emperor!' 'Where have you been?' 'Will you kindly excuse me, but I thought you were a bird?' Whenever he bit or spoiled anything, he would say, 'Don't bite!' 'Be quiet, do!' 'What have you been doing?' 'Wait a minute, you rascal; what have you been doing?' 'I am coming after you!' 'How are you, you little chatterer?' 'Have you got something to eat?' 'I hope you will enjoy it!' 'Hush, hush, good night!' 'Pretty Poll may go out; so come, come, shoot, Poll, shoot!' and then he would shoot, calling loudly 'Puff!' 'There, there, there!' 'Go home, come march, go home directly!' 'I'm coming after you!' He would ring a bell that was placed in his house, and say, 'Who's that ringing? who's that ringing?' 'Why, here's a little dog! a pretty little dog!' Then he would whistle to the dog and say, 'Whistle, little dog!' and ask, 'What does the little dog say?' and then bark. If told to fire, he would say 'Puff!' and give the word of command, 'Halt; right about face; make ready; present; fire! Bravo, bravo!' He never said 'Bravo!' in connection with his faults.

THE JAKO (*Psittacus erithacus*).

"Sometimes he would cry out, 'What are you shaking me for? What are you doing to me?' and scream for help, as though being shaken, and call out again, 'Don't shake me, you rascal! Ah! that's the way of the world! alas! alas! Don't shake me, you rascal!' and then laugh with great distinctness. If anything ailed him, he would exclaim mournfully, 'Poor Poll is ill; poor little parrot!' If annoyed, his tone became defiant—'Wait a minute; I'll come and punish you!' If ever he saw the cloth being laid, or heard from a distance that preparations were making for a meal, he would immediately call out, 'Let's go to dinner!' When the family were at breakfast he would ask, 'Am I to have anything? I should like some chocolate!' He would remain quiet as long as his master slept; but if in another room would begin singing and whistling at break of day. In order to see if it would be possible to teach Jako to sing, we selected such words as he could say, and he was soon able to sing a verse of a song; he could put in harmonies, and readily run up and down the scales, and learnt to whistle many scraps and shakes. He never kept to the same key, but would take the air half a tone higher or lower, and yet never utter a false note. Whilst at Vienna he was taught an air from 'Martha,' and on being shown a dance, tried to imitate it by raising one foot after another, and putting his body into dancing attitudes. Kleimayrn died in 1853, and Jako fell ill, as it would seem, from pining after his beloved master. In 1854 he was so weak that he had to be laid in a little bed and carefully tended; he continued, however, to talk incessantly, and after saying, 'Your poor little parrot is ill!'—died."

A young lady has given us the following particulars about another "Jako:"—"The parrot of which I am about to speak was given me by a man who had lived for many years in the East Indies. The bird at first knew nothing but Dutch, but soon learnt German and French, and after a time spoke as clearly as a human being in all three languages; he was so observant that he often used phrases which had never been taught him, applying them on fitting occasions in the most astonishing manner. He said a number of disjointed Dutch words and sentences, intermixing German quite correctly when the phrase was not forthcoming in the former language. He could ask, answer, and request you to give him something, and thank you for it, varying the use of the words according to the time, place, or person. 'The little parrot wants something to eat!' If he did not get what he wanted, he would immediately scream out, 'I *must* and *will* have something to eat!' And if still kept waiting would begin throwing everything about to vent his anger. He said '*bon jour*' in the morning, and '*bon soir*' in the evening; asked permission to retire, and took his leave of us. When he was carried out, he would say, '*Bon soir, bon soir.*'

"This bird was particularly attached to his mistress, from whom he received his food, and would press his beak on her hand, and say, 'Kiss the lady's hand.' He took great interest in all she did, and whilst she was busied with something would often ask, with most comic earnestness, 'What is the lady doing?' After her death, he evinced great sorrow, and it was only with difficulty that he could be persuaded to take food, or that his life could be preserved. He whistled wonderfully well, particularly the tune, 'Ich dank dir schon durch deiner Sohn,' and sang most beautifully. He would say to himself, 'Polly must sing a little,' and then begin—

"'Perroquet mignon,
Dis moi sans façon,
Qu'a-t-on fait dans ma maison
Pendant mon absence.'

Or—

"'Ohne Lieb und ohne Wein
Können wir doch leben?'

Then he would sometimes say—

"'Ohne Lieb und ohne *maison*
Können wir doch leben.'

Or—

"'Ein Kuss—*sans façon.*'

The latter version seemed to amuse him so much that he would burst into loud laughter. 'Polly, what does Lottie say?' he would sometimes ask himself, and answer immediately, as though some one else had put the question, 'Oh, my beautiful, beautiful little parrot; come and kiss me.' And this he would utter with the exact tone of endearment used by Lottie. He expressed his conceit by saying, 'Ah, how beautiful I am!' at the same time stroking his beak with his foot, though he was by no means handsome, for he had the ugly trick of pulling out his feathers. On this account he was ordered wine baths, which were administered to him by the help of a watering can. These baths were most disagreeable to him, and as soon as he saw preparations being made he would beg imploringly, 'Please don't make me wet! Poor little parrot! Please don't wet me!'

"He could not bear strangers, and those who came to see him, and wanted to hear him speak, only attained their wishes by hiding themselves. In their presence he was as quiet as a mouse, but chattered incessantly when visitors were out of sight, as though he wanted to indemnify himself for the restraint he had been under. There were people, however, who managed to gain his affections, and he would talk with them when they came, and used even to crack his jokes about them. A fat major, with whom he was well acquainted, was trying one day to teach him a new trick. 'Get upon the stick, parrot; get upon the stick!' commanded the soldier. But Polly seemed sulky. All at once, the bird burst into a loud laugh, and said, 'Get upon the stick, major; get upon the stick!' Another friend of his had not come to the house for some time. The visitor had been talked about, and it was expected that 'Roth,' as he was called, would make his appearance on a certain day. 'Here comes Roth,' said the bird, suddenly, as he saw him approaching through the window, and recognised him from some distance.

"This poor parrot came to an unlucky end; it was given as a present to a relation of its master, who had become superannuated, and had taken a childish fancy to the bird. But it could not endure the parting from all it loved, and died in the course of a few days."

We could tell of many grey parrots that have been brought to great perfection in the art of speaking, but the preceding anecdotes combine all that these birds have been known to do, so we will only observe that their wonderful memory and powers of mimicry have sometimes their disadvantages. Their first teachers are usually sailors, and it may, therefore, be easily imagined that their vocabulary is neither choice nor elegant; unluckily, the best educated birds will often remember these old lessons, and intermix the lowest and commonest words with their pretty phrases and speeches. The parrot can reproduce any peculiar sound with as much ease as it learns words, and will imitate the creaking of a neighbouring door, the barking of a dog, the mewing of a cat, or even an old man's cough.

Mr. Wood tells us that a friend of his had a parrot of this species, which proved herself a most tender and affectionate guardian. In a hedge of roses near its owner's house, a pair of finches had built their nest, and were regularly fed by the family, who were much attached to all kinds of pet animals. The numerous visitors to the rose hedge attracted Polly's attention, and, seeing the food they gave strewed around, she determined to emulate their good example. Being allowed to fly about, she left her cage, imitated the cry of the old finches, and gave the nestlings a part of her food; but these expressions of sympathy did not please the parent birds, who at once deserted their young from fear of the large stranger, so that Polly saw the little ones thus become orphans, and a fine field opened for her fostering care. From that hour she refused to return to her cage, and remained day and night near her adopted children, whom she fed with the greatest assiduity, and had the pleasure of rearing successfully. When the little ones were fledged they used to perch upon the head and neck of their foster-mother, who bore the burden with exemplary care; the parrot, however, received but small thanks, for her young charges had no sooner wings strong enough to bear them than they flew away. Poor Polly was for some time in bitter distress, but at length found consolation for her motherly feelings in the discovery of some deserted hedge sparrows; these she conveyed to her cage, where they were soon on the best terms with their adopted parent.

Many American varieties of the Short-tails, usually called GREEN PARROTS (*Chrysotis*), differ from their African congeners, the Jakos, in their prevailing green colour, and in the small size of the bare parts around the eyes. Their body is compact, the beak strongly bent, the tail short, broad, and somewhat rounded; the wings broad, and strongly formed, reaching nearly to the middle of the tail; the legs are strong, thick, and fleshy; the feet powerful, and armed with strong claws, the plumage lies close and thick, the feathers being small and imbricated. Two species of this family are especially well known to us, the Green and the Amazon. They are both large birds, of fourteen inches long, and about twenty-one to twenty-three across the wings; the tail measures from four inches to four inches and two-thirds; and the wing, from the shoulder to the tip, seven inches.

THE AMAZON PARROT.

The **Amazon Parrot** (*Chrysotis Amazonicus*) is of a brilliant green colour, sky blue on the brow and top of the head, yellow on its cheeks and throat, and red on the shoulders; the side tail-feathers are blood-red beneath, the beak deep horn grey, the cere blackish, the feet ash grey, powdered with white, and the iris externally bordered with orange, and internally with pale yellow. The Green parrot (*Chrysotis æstivus*), on the contrary, has its forehead and cheek stripes of a sky blue colour. The shoulders are green, and the red side-feathers of the tail edged with green.

From the observations made by the Prince von Wied, Speke, Schomburghk, and Burmeister, we learn that both kinds are widely spread over South America.

The Amazon parrot avoids the forests near the coast, but frequents the woods and bushes of the higher lands, while the Green parrot prefers the primitive forests. Both kinds are much alike in their habits and mode of life. Early in the morning they leave their roosting-places, and fly screaming through the air, beating violently with their wings, until they reach the woods or plantations where they can find fruit; at noon they rest, after which they set out in search of food; and in the evening, except in breeding time, assemble in great numbers, making a terrible noise until a roosting-place is found for the night.

The Prince von Wied gives the following account of the Green parrot, which is called the Kuriche by the Brazilians:—"In all the eastern coasts of Brazil that I travelled through this bird was very common; I found it in numbers wherever there were thick forests, and on the borders of mango swamps at the mouths of rivers; it breeds equally well in all such places, but seems to prefer localities where it can obtain the fruit of the mango. Great flocks inhabit the wooded country around Rio de Janeiro, Parahiba, Espirito Santo, and Belmonte, and their loud voices may be heard morning and evening in the bushes of the bog-like country, which is watered by the floods from the rivers. These bushes stand in the same relation to the Brazilian rivers as willows do to European streams; but the trees are higher, and the parrots can often make their homes on their strong stems or branches. In the breeding season they usually fly up into the air in pairs, calling and screaming loudly, but except at that time are met with in very numerous flocks. We ourselves have seen such enormous swarms of short-tailed parrots in the Mucuri forests and other places, that the whole woodland was filled with their extraordinary cry. On these occasions many different species seemed to be combined in one flock; their united screams were deafening, and as one party drove another from the trees, excitement gave new vigour to their shrieks. Should they alight upon a lofty, thickly-foliaged tree, it is often very difficult to see them, as their green hue is a great protection, and their presence is only indicated by the fall of the shells and stones of the fruit they devour. Whilst eating they remain quiet, but if alarmed will utter loud cries. They are shot in great numbers, as they are excellent food, and the soup made from their flesh is much esteemed both in Brazil and Surinam. These parrots lay two white eggs in holes of trees, upon a bed of shreds of wood, chipped out in preparing the nest; they breed but once in the year, and that in the spring time of their native land.

THE AMAZON PARROT (*Chrysotis Amazonicus*).

The young, if taken from the nest, are soon tamed, and learn to speak distinctly; on this account they are frequently found in the Brazilian houses, and are brought in great numbers into the towns, and sold to sailors, who bring them to Europe; they do not learn to speak so readily as the grey parrot, but prove teachable, tolerably gentle, and amiable towards those that feed them.

Under the generic name of PIONUS, Wagner unites many small parrots, which we will call the BLUNT-TAILED PARROTS. Their bodies are compact, the tail very short, the wings on the contrary being slender, pointed, and so long that they reach at least as far as the middle of the tail;

the beak is compressed at the sides, and the upper mandible generally terminates in a long pointed hook. The legs are strong and powerful, the plumage usually harsh, and the feathers cordiform and particularly small. Those on the head and neck are thick and strikingly coloured. We are familiar with many varieties of these birds, most of them from South America, and with others from Africa, which have lately been placed in a different tribe.

THE MAITAKKA (*Pionus menstruus*).

THE MAITAKKA.

Of all the blunt-tailed parrots, none is brought to Europe in greater numbers than the Brazilian MAITAKKA (*Pionus menstruus*). This bird is of middle size, ten and a half inches long and twenty inches across; the tail is three inches long, and the wing six inches in length from the shoulder to the tip. The plumage on the head, neck, throat, and upper part of the breast, is ultramarine, through which the black ground colour is visible: the neck feathers are of a copperish green, edged with blue. The back, lower part of belly, breast, and wings are copper green, the feathers on the back being edged with a darker shade; those upon the breast are shaded with light blue. The upper wing-covers are of a yellowish olive green, the under covers the colour of verdigris; the quill-feathers are green, bordered with black, the wing-feathers blood-red, yellow at the tip, and the shafts blue. The two middle tail-feathers are green, the tip and outer web are blue, and near the root of a light blood-red. The beak is horn grey at the tip and paler at the base, with a rose-coloured spot on both sides beneath the nostrils; the legs are of a greyish slate colour, the eye-rings bluish grey, and the eyes greyish brown. The female resembles the male, but is somewhat paler. In the young, grey is generally the prevailing hue; in old birds blue predominates.

According to the testimony of travellers, particularly the Prince von Wied, Schomburghk, and Burmeister, the Maitakka inhabits all the country near the coast in Brazil and Guiana, where these birds are met with in great numbers. They live in pairs in the dry season, and assemble in large flocks during the rainy part of the year, flying with loud cries from tree to tree, and settling upon those most heavily laden with fruit, to which they often do great damage, returning in the evening to their usual resting-places. Their movements depend upon the time when the different fruits are ripe, and to enjoy these they fly about the country in various directions, during the rainy season approaching nearer to the plantations on the coast and open country, but in the hotter part of the year keeping more immediately in the neighbourhood of the principal forests.

The flocks of these birds are very noisy; but when pairing they only utter their call-note, which is a shrill, harsh cry. They breed during the dry season, and their preparations for sitting do not differ from those of other parrots. The Maitakka is hunted zealously throughout the whole of Brazil, partly in order to drive it from the plantations, and partly for the sake of its flesh. It is often tamed, and though not so teachable as other parrots, soon becomes accustomed to captivity, and can be taught to utter disjointed words. Great numbers are brought to the coast, and eagerly purchased by sailors, for though very numerous in Europe, these birds always command a high price. With care they can endure confinement for many years.

THE CRESTED HAWK PARROT.

One of the American parrots which we include in this family reminds us of the cockatoos, and must be considered as the type of a peculiar tribe (*Deroptyus*). Linnæus, who was acquainted with it, gave it two distinct names, the one on account of its sparrow-hawk-like plumage (*Deroptyus accipitrinus*), the other, because of its frill of elongated feathers (*Deroptyus coronatus*). We will call it the CRESTED HAWK-PARROT, seeing that the long feathers on the nape of the neck, which can be raised at pleasure, distinguish it from other South American species.

The beak is large, strongly but bluntly toothed, and having the ridge of the upper mandible powerfully hooked and projecting. The cere is short, and its margin curved like the letter S. The eyes are surrounded by a broad bare circle; the bluntly-pointed wings reach to the middle of the tail, the latter being of tolerable length and formed of rounded feathers, of which the three exterior on both sides are shortly graduated; the legs are weak, and the toes long. The plumage is on the whole extremely rich, of a pale yellowish-grey upon the head; the exterior margin of the forehead is of a brown colour; the crest is composed of dull blood-red feathers, edged with sky blue. The plumage on the back is light green, somewhat darker in the middle than on the sides, and the feathers on the lower part of the body are, as far as they are visible, blood-red. The sides of the cheeks and the throat are of a brownish tint; the primaries quite black, and the secondaries similarly coloured on both sides. The tail is bluish on its upper surface, and black underneath. Burmeister gives the length of this rare and beautiful species as being fourteen inches, five and a half of which belong to the tail; the wing measures seven inches from the shoulder to the tip.

As far as we know at present, this bird prefers dwelling in the wooded district near Guiana and the River Amazon. Spix found it at Villa Nova, on the river above-mentioned. Schomburghk mentions it but twice. He says that he met with it on the Rupununi, and also in the huts of the Warrau Indians; but though he saw numerous flocks of these magnificent birds enlivening the palm-trees of Sawari, and greeting passers-by with piercing cries, and thus had abundant opportunities for making observations, he tells us extremely little about them. "When angry," he informs us, "this bird is without doubt one of the most beautiful of the parrot race, as it then raises the brilliantly tinted feathers on the back of the neck, until they stand up perpendicularly, thus forming a flowing circle round the head." The settlers call it "Hia," which word is supposed to resemble its cry. From the same writer we learn that this species inhabits the lower woods, approaching the settlements with confidence, and although easily tamed, is weakly and unteachable. It makes its nest in the holes of trees, and lays from two to four eggs.

THE DWARF PARROTS.

Among the most vivacious and docile members of this family, the Dwarf Parrots (*Psittacula*) deserve our particular notice, for their behaviour is quite in harmony with their beautiful exterior. "The poets," says Schomburghk, "could not have been aware of the tender love that exists between a little pair of Dwarf Parrots, or they would never have selected doves as their models of ideal tenderness; indeed, it is impossible to compare the latter with the former in this respect. Between these "Love birds," as we generally call them, there exists the most perfect harmony in all their acts and wishes. They eat together, share the same bath, and if the male bird utters his cry his mate will instantly join her voice to his. Should one fall ill, the other feeds it, and, however many may be assembled on a tree, the little couples never leave each other. It is well known that these elegant little creatures can only be reared in pairs, or, at any rate, they must be allowed the society of some of their race. If taken young out of the nest, before they have chosen a mate, it may happen that solitary individuals can be reared; but the older birds never survive the death of their little companions, and soon pine themselves to death. More need not be said in favour of these 'inseparable birds.'"

The "Dwarf Parrots" are not larger than Finches or Larks, and are distinguished by their short, bluntly-hooked beaks, and strikingly short small tails, the feathers of which are tolerably equal in size and pointed. The quills of their wings are short, and when the latter are closed reach to the end of the tail; their legs are likewise short and feeble. The plumage is soft, long, and large-feathered; the individual feathers are, usually, not bright, but strikingly coloured and marked. We are acquainted with many species, which are spread over Africa, Asia, and South America, and resemble each other in their habits and mode of life. All are true parrots, climbing the branches with the greatest dexterity, flying rapidly, and feeding upon fruit and corn; the nests are made in the holes of trees, and their eggs are small, rounded, and white.

SWINDER'S LOVE-BIRD.

Swinder's Love-Bird (*Agapornis Swinderiana*), one of the prettiest members of this group, is a tiny creature, at most five inches in length, of which more than one inch belongs to the tail: it is about nine inches broad, and each wing measures three inches from the shoulder to the tip. The prevailing colour of the plumage is green; the under part of the body, wings, and upper tail-covers are a beautiful azure blue; the short, scarcely rounded tail is, with the exception of the two middle feathers, green, but bright red at the root and towards the end, with a black line dividing the two colours. The face, belly, and tail-covers are yellowish green, and the upper part of the throat is surrounded by a black band. These beautiful birds inhabit the western and interior parts of Africa, but information as to their habits in their native land is entirely wanting.

THE CRESTED HAWK PARROT (*Deroptyus accipitrinus coronatus*).

THE SPARROW PARROT.

The **Sparrow Parrot** (*Psittacula passerina*) is one of the smallest of the Brazilian parrots, being scarcely or not at all larger than the species we have just described. The colour of the plumage is a bright green, shaded into yellow upon the brow, face, and lower parts. The under-side of the tail and tail-covers are of a pale bright bluish green; the anterior border of the wing, the large wing-covers, the back, and secondary quill-feathers, as well as the inner wing-covers and the under part of the body, are of a bright ultramarine; the primary quills are blackish brown, with a green anterior edge. The beak is a bluish ashy green; the cere somewhat darker; the feet ash grey, with green, scale-like plates; the eyes brown.

The Sparrow Parrot is very common in Brazil, and inhabits both the woodlands near the sea-coast and the bushes in dry districts, to which it is an admirable ornament. These birds come in troops into the gardens of the settlers like our sparrows, which they also resemble in the fact that when in company with others of their kind they scream and chatter in a very confused manner, the united flock producing a shrill twittering sound. They settle in great numbers upon a tree or shrub to nibble the fruit, during which time the whole swarm is in unceasing confusion, climbing nimbly up and down the branches, and whistling briskly. In other respects the Sparrow Parrot lives after the same manner as the rest of its relatives, making the same kind of nest, sometimes using the deserted oven-shaped abode of the Crested Parrot, and laying from three to four white eggs upon the shreds of wood that cover the bottom of the hole. Both young and old are often captured by the Brazilians, and seem soon to forget the loss of their freedom, if they are not separated from their mates. They are but short lived, and for that reason seldom reach Europe; still, it occasionally happens that, with great care, they will survive some years, and even breed in a state of captivity.

THE SISKIN PARROT.

The SISKIN PARROT (*Nasiterna pygmæa*), the dwarf among the dwarfs belonging to this order, lives in New Guinea and the Papuan Islands. Its green plumage is varied by a yellowish shade on the head, and the face is light golden brown; the middle tail-feathers are blue, the rest are black, with yellow tips; the beak is extraordinarily high and strong. As far as we know, this bird is not rare upon the high trees on the coast of New Guinea and in the forests of Salawatis and Misool, but no observer has as yet given us particulars of its habits.

COCKATOOS.

AMONGST the different species of parrots with which Australia is enriched the COCKATOOS (*Plyctolophus*) take high rank. The members of this group are distinguished by their compact body, short tail, and wings of middle size; their large, short, broad beak toothed at the margin, the upper mandible of which terminates in a strong hook. The tongue is usually fleshy and smooth, the region of the eye bare, and the head decked with an upright tuft of bright and beautiful feathers. The plumage is generally very striking, either by reason of its pure white or delicate rose colour, or (for a parrot) the unusually dark tints that predominate. Cockatoos are found not only in Australia, but in the Moluccas, New Guinea, and the Philippine Islands, where most kinds establish themselves in enormous flocks in the woods, and fly from thence over the fields and plains, presenting an appearance that is enchantingly beautiful. "Perched under the shadow of the dark foliage," says Mitchell, "their bright wings and glowing crests transform the heights upon which they live into regions of the most exquisite beauty." In their habits and mode of life Cockatoos resemble other parrots, and must be reckoned among the most pleasing of the whole race. It is quite true that when living together in large flocks their cries frequently become a deafening noise intolerable to ordinary ears, but a solitary bird is very engaging; indeed, there is something so extremely tender in the tone in which it utters the word "cockatoo" (whence is derived the name), that it attracts us involuntarily, for the cry of "cockatoo" is always intended to express a kindly feeling, and changes when angry into a most fearful shriek. The Cockatoo soon learns to make friends with mankind, plays fewer tricks than other parrots, appears grateful for any kindness that is shown to it, and seems eager to make a fitting return; unkindness alone makes it ill-tempered or mischievous, and its excellent memory enables it to avenge an injury after the lapse of years. Its disposition in general is mild and gentle, and its good qualities numerous. It learns to speak with tolerable ease and fluency, forming the words into phrases. as though it understood them, and applies whole sentences at a fitting opportunity. In their wild state, Cockatoos assemble in large flocks, which remain more or less united even during the breeding season; they pass the night buried in the leafy shelter of the trees, and at break of day make the woods resound with their noisy screams as they rise into the air with light strokes of the wing, hovering and gliding till they reach a field yielding suitable food. Fruit, corn, and seeds constitute their principal nourishment, and they will also devour buds and bulbs, obtaining the latter very dextrously by the help of their long beaks. Every fresh occurrence in their daily life is greeted with loud cries; and should a second flock pass over the place where they have settled, their combined shrieks are perfectly appalling, and can only be imagined by those who have heard the yells a few captive cockatoos are capable of producing. As soon as hunger is appeased these flocks retire to rest beneath the shelter of the branches, where they remain some hours in comparative quiet; they then again go in search of a meal, returning to pass the night on their accustomed trees. Thus they live till the breeding season, when they pair, and each couple sets out to find a suitable home, preferring holes in trees, but also resorting to fissures in the rocks. Certain precipices near the South Australian rivers are yearly visited by thousands of Cockatoos, just as the cliffs of the north seas are infested by huge flocks of sea-gulls. We are told that some of these rocks are completely honeycombed by them, and the strength and firmness of their beaks renders this assertion easily credible. They lay two white, pointed eggs, about the size of those of a bantam fowl; but in what manner incubation is carried on we are not aware. We are told by travellers that they soon become timid if they suspect danger, and, like other kinds of parrots, carry on their depredations with so much cunning that it is very difficult, or indeed impossible, to drive them from the fields. The natives hunt them in a very peculiar manner. "Perhaps," says Captain Grey, "it would be impossible to imagine a more exciting spectacle than that of seeing the Australians hunt the Cockatoo. They employ for this purpose a very remarkable weapon called a boomerang; this is a sickle-shaped flat instrument made of wood, which can be thrown by the hand to a distance of 100 feet, and flies in small circles with many windings from the direct path. An Australian will follow a flock either into the fields or woods, preferring, however, places where large trees are situated near water, such spots as these being the favourite resort of the Cockatoos. Here they are to be found in innumerable hosts, climbing on the branches or flying from tree to tree; here they also sleep, and here the wily native comes, most watchfully observing all necessary precautions. He goes from one tree to another, and creeps from bush to bush, taking the greatest care not to disturb the wary birds, but in vain, for, however quiet his movements may be, he is soon discovered, and his near approach greeted with a hideous cry. The birds have already perceived that danger is at hand, though they do not know what the next step may be. At length their pursuer reaches the water, and discloses his dark form to their view; amidst piercing shrieks the white cloud of birds rises into the air, and at the same instant the Australian throws his weapon amongst them. The boomerang, which is thrown with great force, dances and springs in the most wonderful manner over the water, and then, rising higher and higher in its wayward flight, is soon careering in the midst of the frightened multitude. A second, a third, and a fourth weapon is discharged; in vain the terrified creatures try to escape, the apparently aimless course of the missile bewilders them and delays their flight. One after the other is struck by the boomerang, and comes to the ground, having probably either lost its head or broken its wing; they fall screaming with pain and terror, and it is only when the dusky hunter has attained his end that the remainder of the terrified flock hide themselves in the foliage of the trees." The flesh of the Cockatoo is tolerably good, and the soup made from it excellent. The number of these birds that find a home with us prove that they are easily captured, and, like all other parrots, they will live a long time if nourished with simple food.

THE LEMON-CRESTED COCKATOO.

The **Lemon-Crested Cockatoo** (*Cacatua galerita*) is known by its white colour (which in some specimens presents the appearance of having had a delicate red breathed upon it), and by its perfectly shaped tuft, formed of two rows of long and slender feathers, that can be raised or lowered at pleasure. This long tuft or crest, the wings, and the inner web of the tail-feathers are of a pale brimstone colour at the root. The eye is deep brown, the beak black, and the foot greyish brown. The length of this species is about one foot four inches.

We are at present uncertain whether this bird is spread over Van Diemen's Land, as well as over the whole of Australia and New Holland, or whether those countries are inhabited by different species of very similar plumage. A careful examination of the Cockatoos most abounding in those three regions has shown a decided difference in the construction of the beak, and justifies the last-mentioned opinion. According to Gould, the Lemon-crested Cockatoo is common to all the Australian settlements except those to the west. These birds live in flocks of hundreds and thousands, much preferring open plains, or slightly wooded districts, to the forests near the coast.

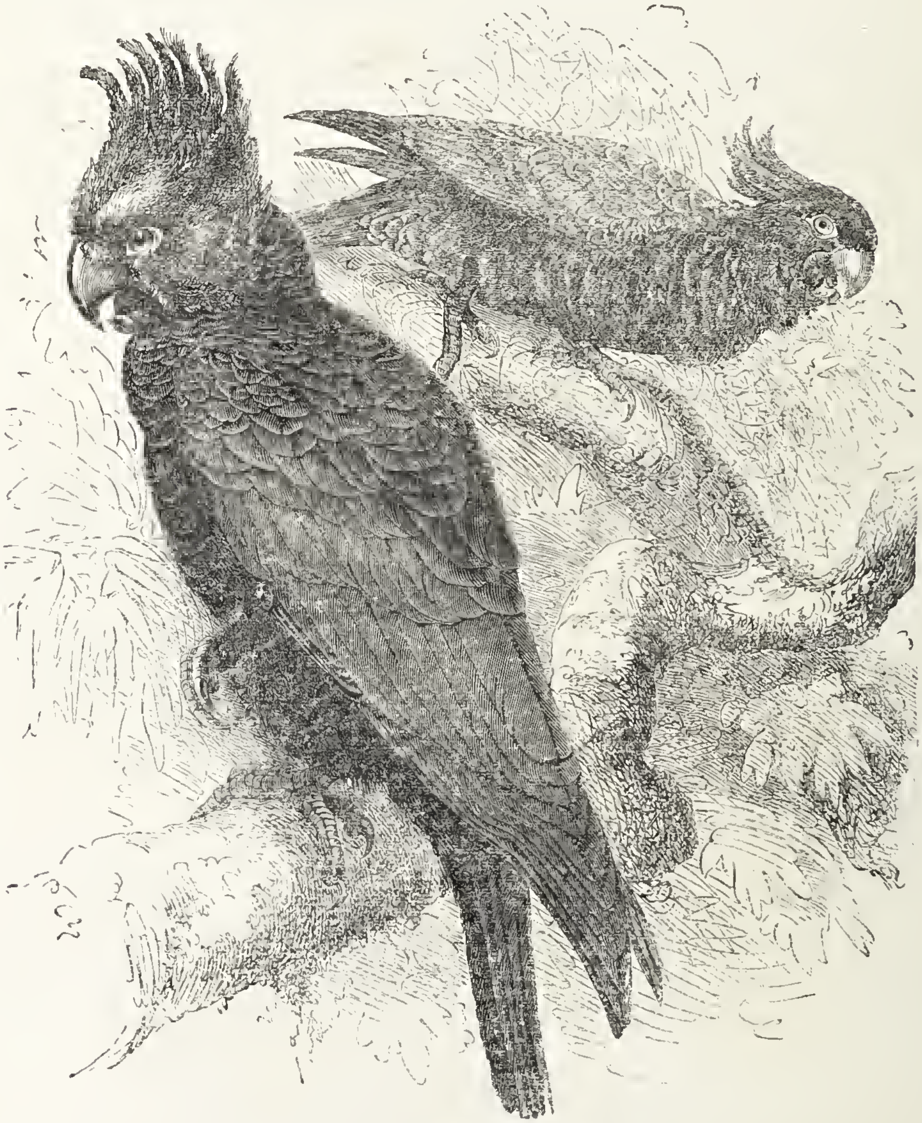
LEADBEATER'S COCKATOO.

The **Inca**, or **Leadbeater's Cockatoo** (*Cacatua Leadbeateri*), another species found on the continent of Australia, differs from the bird we have just described in the arrangement of its colours. Its plumage is white, but the forehead, sides of the neck, the middle and under surface of the wings, are of a beautiful rose tint. The crest is magnificent; the individual feathers of which it is composed are bright red at the root, spotted with yellow in the middle, and tipped with white. When this plume is laid back, nothing but the white tips can be seen, but it is no sooner raised than the blazing red appears, and the yellow spots unite themselves into a stripe that renders its appearance still more striking. The spaces around the eyes are light brown; the beak light horn colour; the foot dark brown. The female is somewhat paler on the lower part of the body, and has large yellow spots upon the crest.

Gould tells us that these splendid birds are spread over the whole of South Australia, living principally upon the high gum-trees and brushwood near the rivers of the interior. They are found principally near the Darling and Murray rivers, and do not extend as far as the north-western coast. During the breeding season they appear in great numbers in certain localities, and animate the otherwise monotonous forests of the interior. The voice of the Inca cockatoo is more plaintive than that of its congeners, and its scream not so harsh.

THE HELMET COCKATOO.

The **Helmet Cockatoo** (*Callicephalus galeatus*) also deserves notice as being the type of a tribe that forms the connecting link between the True Cockatoos and the **Geringeroes** or **Raven Cockatoos** of New Holland. This bird is known by its short vaulted beak, which has a slightly projecting hook on the upper mandible, and by its tolerably strong and rounded tail. The plumage is beautiful and richly marked; the upper part of the body is a dark slate blue, the forehead, cheeks, and crest scarlet; all the feathers, except the primary and secondary quills and the tail-feathers, are slender, and edged with whitish grey more deeply on the upper than on the under part of the body. The female is darker, and almost of a slate colour, the upper surface of the neck and back sprinkled with pale grey, and the rest of the body marked with irregular greyish white stripes. The feathers on the under parts of the body are of a brimstone colour, edged with dusky red. The spaces round the eyes are blackish brown, the beak light horn colour, the feet black and sprinkled with a greyish kind of dust. We have no knowledge whatever of these birds in their native state. Gould tells us that they are found in the woods on the southern coast of Australia, and on some of the neighbouring islands, as also in the northern parts of Van Diemen's Land, where they inhabit the highest trees, and luxuriate upon the seeds of the different kinds of Eucalyptus.



THE HELMET COCKATOO (*Callocephalus galeatus*).

Many species of Cockatoos are remarkable for the peculiar formation of their beaks, the upper part of which is unusually prolonged. These birds form a distinct group, but much resemble the true Cockatoos, and have therefore been placed among them. Such, for example, is

THE NOSE COCKATOO.

The NOSE COCKATOO (*Licmetis nasicus*) is from sixteen to seventeen inches in length; the beak measures along the ridge about two inches. Both sexes are of the same colour, the whole plumage being white, the under-wing and tail-covers mottled with pale brimstone yellow. All the feathers on the head and neck as far as the upper part of the breast, are vermilion red, white at the tip; a vermilion stripe runs across the forehead, reaching to the back, and passes like a pair of eyebrows over the eyes. There is also a crooked line of red upon the breast. The beak is light horn colour, the feet ash grey. Some of the feathers near the cheeks can be raised at will. Gould considers that there are two species of this bird, one of which is found in Western Australia or New South Wales, the other is confined to Port Philip and Southern Australia.

THE NESTOR COCKATOO (*Nestor productus*).

The Nose Cockatoos seem rather to inhabit the interior than the neighbourhood of the sea-coast. They assemble in large flocks, and spend the night and noonday upon the summits of the forest trees; passing, however, a considerable portion of their time on the ground, where they run, or rather hop, somewhat slowly; their flight, on the contrary, is very rapid, and much lighter than that of their congeners. Their food consists of corn and seeds, but principally of buds and the bulbs of different plants, more especially of orchids, which they obtain by the help of their long and curiously shaped beak. The breeding of these birds offers nothing unusual; their two white eggs, which resemble those of the Tufted Cockatoos, are generally laid on a bed of decayed wood upon the ground, or in some hole in a large gum-tree. This species can endure captivity for many years, and has lately been brought to Europe in great numbers, but, notwithstanding this, it is not often met with in our collections. Gould has observed that a caged Nose Cockatoo is much more sullen, gloomy, and irritable than others of its race, and this we can fully confirm, having had for a year one of these birds in our possession, that has never become reconciled to its keeper, but threatens with its beak all who approach; it cannot endure to be stroked or touched, and everything unusual excites its rage; at such times it erects the small horseshoe-shaped crest upon its brow, so that the splendid red feathers are displayed, wags its head violently, repeatedly snaps its beak, and screams most furiously. The word "cockatoo" is mingled with its cries, but uttered in quite another tone to that employed by its congeners; the latter generally utter it in a soft drawling manner, whilst the Nose Cockatoo on the contrary pronounces the two first syllables hurriedly, and lays a strong emphasis on the last. The facility with which this parrot can move its beak in any direction is very remarkable, and no other species that we are acquainted with has such suppleness and command of the joints of its jaws. The beak of the Nose Cockatoo is, indeed, the most extraordinary pair of pincers that ever was constructed. In justice to this bird, we must add to the foregoing remarks that it may occasionally be made very tame, and not only learns to speak, but is able to apply its language very intelligently. There is one in the Zoological Gardens at Antwerp that is an universal favourite with the visitors, with whom it converses freely, greeting its acquaintances as soon as they appear, without the slightest ill-humour or sullenness.

THE NESTOR COCKATOO.

The Nestor Cockatoo (*Nestor productus*) represents a very remarkable tribe of parrots, recognisable by their extraordinarily elongated beak and sickle-shaped upper mandible, which projects far beyond the lower. The tail is of middle size, the points of the tail-feathers being in some places denuded of their web, and the wings, when closed, reach nearly to the middle of the tail. The tarsus is decidedly higher, and the plumage harsher and more imbricated than in other Cockatoos. In our specimen it is much variegated, the upper part of the body is brown, the head and back of the neck mottled with grey, each of the feathers covering these parts being bordered with a darker shade. The under part of the body and tail-covers are of a deep red; the breast, throat, and cheeks, are yellow, the latter having a reddish tint; the tail-feathers are orange at the root, and striped with brown: the inner web of the quills is dark red and brown; the bare place round the eyes, the legs, and the cere, are of an olive brown; the beak is brown; and the eye a very dark brown. Both sexes are similarly coloured, but the young are of a dark olive brown on the breast, instead of being adorned with the red and gold that decks their parents.

The Nestor Cockatoos are not only striking in their appearance, but lead a somewhat remarkable life; they are confined to a very limited district, only inhabiting New Zealand and the neighbouring islands. The bird we have just described is only found on Philip's Island, the circumference of which does not exceed five miles; and Gould informs us that people living for many years on Norfolk Island, at about four or five miles distance, have never seen it. The extremely limited extent of the habitat of this species is very unpromising as regards its preservation, and it will doubtless soon share the fate of the Dronte; since the cultivation of the island, it has been periodically hunted, and its days are numbered; probably it is already extinct, as we have seen nothing of it for several years. The rocky parts of the island, partially covered with trees, form, or rather *did* form, its favourite resort; here it passes its time, principally upon the ground, seeking for roots, which it digs up with its beak, at least, so we imagine, as the bill is often found covered with earth, and, indeed, we can well believe that so remarkable an instrument may be employed for this purpose. According to some naturalists it sucks nectar, although its tongue does not, like that of the Lory, end in a tuft, but has only a nail-like horny plate at the tip, closely resembling the nail upon a human finger. The hard nuts that other parrots enjoy are avoided by the Nestor, whose beak is not strong enough to break the shell. Gould saw one of these birds in the possession of Major Andrews, in Sydney; it was a cheerful, lively companion, and seemed fully inclined to attract the attention of strangers. Its habits differed considerably from those of other parrots, and its owner did not keep it in a cage, but allowed it to fly about the entrance-hall. We are told of another tame Nestor that it had a great fondness for green food, and would pick the leaves of lettuce and other juicy plants. The voice of this bird has a harsh, quavering, snarling sound, much reminding us of the barking of a dog. As regards its propagation, we only know that it is said to lay four eggs in some hole in a tree.

THE EAGLE COCKATOO.

The Eagle Cockatoo (*Dasyptilus Pequetii*) belongs to the same division as the last-named species, and is remarkable for its shape and plumage, reminding us, in some respects, of the birds of prey. Nothing positive can be said as to its native land; Gould tells us that it lives on the island of Formosa, where no other parrots are known, but it would rather appear to be an inhabitant of New Guinea or Salawatti; indeed, Rosenberg speaks decidedly as to the first-named island being its home. The Eagle Cockatoo is about twenty inches long, ten of which are included in the tail; the wings are ten and a half inches in length. This species is recognised by its beak, the upper portion of which does not rise so high above the lower mandible as in the Nestor; and by the plumage of the head, consisting of a few stiff bristles and slender upright feathers, with very stiff hard shafts. The cheeks and cheek-stripes appear almost bare, the wings and tail are shaped like those of the last-mentioned bird, though the tail is somewhat longer and more rounded. The plumage is of a brilliant black, shading into grey on the throat, head, and breast, the feathers on these parts being sprinkled with pale brown. The wing-covers along the carpus, the first wing-covers of the secondary quills, the under wing-covers, the five first feathers of the secondary quills on their outer web, the feathers of the axilla, belly, and rump, are of a beautiful scarlet, which is somewhat darker on the under tail-covers; the upper tail-covers are edged with dark red, the beak is black, and the feet dark brown. Notwithstanding the extreme rarity of this creature, we have been able to take our description from a living bird which was for some time in the Earl of Derby's celebrated collection.

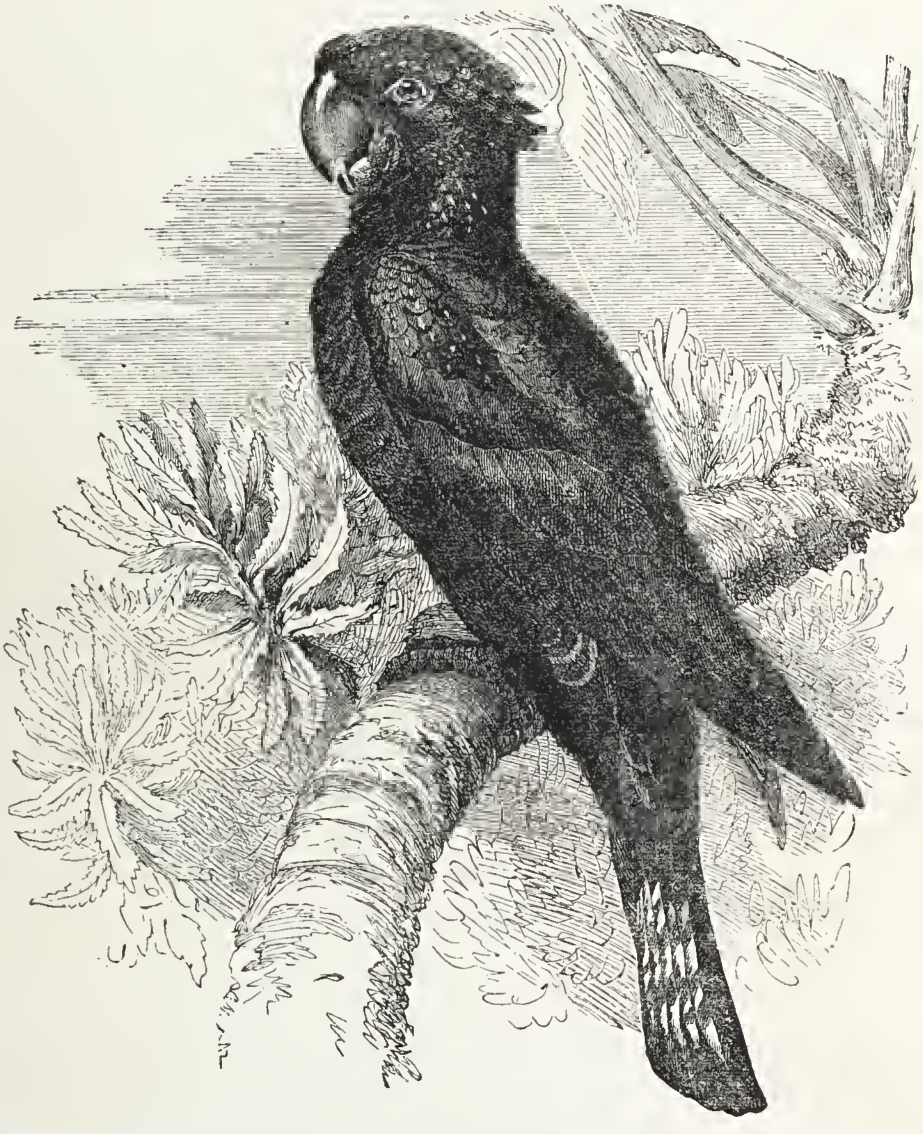
In New Guinea and the neighbouring islands, viz., Salawatti, Misool, and Waigui, we find several kinds of parrots that are included among the Cockatoos, although their resemblance to these birds is merely superficial. These are the Long-billed Parrots (*Microglossus*) of Le Vaillant—very large birds of a dark colour. Their resemblance to the Cockatoos consists principally in their short square tail, and the plume upon the head, although the latter is of quite a different shape to that of the true Cockatoo. Their naked cheeks, and enormous upper mandible, remind us of the Araras. The shape of the tongue is quite peculiar; this organ is of medium length, fleshy, but no broader than it is thick, the upper surface is hollow and flattened at the tip; this strangely-shaped tongue can be protruded, and employed as a spoon to convey food into the mouth, the edges being very flexible, and capable of being bent towards each other. The other distinguishing characteristics of the Long-billed Parrots are the naked tarsi (which are bare as far as the heel-joints) and the short flat soles of the feet.

THE CASMALOS.

The CASMALOS (*Microglossus aterrimus*), the best known of these species, is an inhabitant of New Guinea, and is one of the largest of the parrot tribe, even exceeding most of the Araras in this respect. Its plumage is uniformly deep black, with somewhat of a greenish gloss; the living bird has a greyish appearance, owing to a white meal-like dust, which, as in most other parrots, is scattered over its plumage; the naked wrinkled cheeks are of a red colour. The crest is formed by a number of long slender isolated feathers, and is of a lighter grey than the rest of the plumage.

THE CASMALOS (*Microglossus aterrimus*).

Little is known of these birds in their natural state. "The Large-beaked Parrot," says von Rosenberg, "is not rare in the islands of Waigui, Misool, and Salawatti, and is found on the coast of New Guinea. It usually perches at the very top of the highest trees, keeping its body constantly in motion, and whilst resting, or when by powerful strokes of its wings it raises itself into the air, it utters a trumpet-like note quite different from that produced by the White Cockatoo. The natives take the young birds from the nest, and, when they have reared them, sell them to traders. In captivity they seem to prefer the fruit of the canary tree, the hard shell of which they manage to crack with the utmost facility. One of these so-called Cockatoos, belonging to a resident in Amboyna, was in the habit of flying about all over the town, but always returned home at the proper time to take its meals and to sleep." Von Marten saw a tame parrot of this kind at Mahai. "The Black Cockatoo," he observes, "when perched stiffly with its tail erect, red face, and powerful beak, has the air of an old general, and, owing to its extreme ugliness, makes a forcible impression on all who see it. It is quiet and slow in its movements, but allows strangers to approach, and utters from time to time a disagreeable, harsh, guttural shriek."



THE RAVEN COCKATOO (*Calyptorhynchus Banksii*).

According to Rosenberg, the Large-beaked Parrot is often seen at Amboyna, where it may be bought for about twenty or twenty-five shillings : in Europe these remarkable birds are amongst the greatest curiosities in our collections. Unlike all other parrots with which we are acquainted, the Casmalos uses its peculiarly-formed tongue in a strange manner ; taking its food with its foot, it carries the morsel to its beak, tears it up, and presses the end of the tongue, which is provided with a round horn-like plate, upon the pieces, which stick to it; the tongue is then drawn in, and the food swallowed; this being a very slow process, the meal usually occupies a considerable time.

The Raven Cockatoos (*Calyptorhynchus*) differ very materially from all other species not only in the colour of the feathers, but in their form. The beak is short, crescent-shaped, and sloping, owing to the great breadth of the lower jaw; the wings are large and broad, reaching only over the first third of the long, strong, and rounded tail; the crest is comparatively small.

The Raven Cockatoos, or Geringeroes, are found exclusively in New Holland, and there only in certain districts. Gould, the great explorer of Australian ornithology, mentions six species in his masterly work, and gives a tolerably full account of their mode of life; there is, however, great similarity between them, and the following observations may be considered as applicable to all.

The Raven Cockatoos are truly *tree*-birds, feeding principally upon the seeds of the Eucalypti, and other trees indigenous to the country, but, unlike other parrots, they will occasionally eat large caterpillars. Another peculiarity is that they only congregate in small parties consisting of not more than from four to eight individuals, and never assemble in considerable flocks. Each part of Van Dieman's Land has its peculiar species.

The manner in which the Raven Cockatoos feed is also very peculiar. Some species break off the little twigs of the fruit trees while eating, apparently out of mischief; and all use their sharp beaks to draw the concealed living insects—principally larvæ—out of the wood. The large caterpillars which they obtain from the gum-trees do not always satisfy their hunger; they wage war upon the grubs that lurk deep in the wood, dextrously stripping off the bark and picking large holes in the branches until they reach their prey. Some species prefer insects to any other kind of nourishment, whilst others subsist upon seeds, principally those of the Casuarinæ and Banksias. Fruit they seem to despise, although they destroy much out of pure mischief, plucking it before it is ripe, to the great annoyance of the owners.

So far as we know, the Geringeroes breed exclusively in the holes of trees, always choosing the highest and most unapproachable trunks, and invariably such as the natives cannot climb. They prepare no regular nest in the holes which they select, or at most only collect chips of wood from the ground, wherewith to line the interior. They lay from two to five tolerably large eggs, 1⅔ inch in length and 1⅓ inch broad. Besides the attacks made upon them by man, the Raven Cockatoos often become victims to birds and beasts of prey. Europeans do not prize their flesh very highly, but by the natives it is esteemed a delicacy.

BANKS' RAVEN COCKATOO.

Banks' Raven Cockatoo (*Calyptorhynchus Banksii*) attains the length of a foot and a half. The plumage of the male is black, the only exception being the tail, which is a brilliant black with a greenish sheen. The female is greenish-black upon the head, spotted with yellow on the neck and wings, and striped with light yellow upon the breast. The male has a broad scarlet band extending along the middle of the tail, but not reaching the two middle feathers or the outer edge of the side feathers. The female has broad yellow and reddish-yellow spotted stripes similarly disposed, both upon the outer and the under side of the tail-covers.

Banks' Raven Cockatoo belongs to New South Wales, and is principally found in the district between Moreton Bay and Port Philip, though by no means rare in the immediate neighbourhood of Sydney and other large towns. Its flight is heavy; the wings are lax, and seem to move with difficulty; it seldom rises high in the air, but will, nevertheless, sometimes fly for a mile at a stretch; whilst on the wing it utters a loud cry, which is less shrill than the harsh screech of the cockatoo. When on the ground, these birds move with difficulty; upon the tops of trees their motions are less deliberate, but always slow. Most of them are shy and distrustful, owing no doubt to the manifold persecutions from which they suffer, and it is only during feeding-time that they are less upon the watch. They are much attached to their companions, and should one of them be killed or wounded, the hapless individual is seldom deserted by the others, who generally fly about him, uttering a wailing cry, and expose themselves so recklessly to the hunter, that he, knowing how to avail himself of this habit, often succeeds in capturing the whole flock.

THE KAKAPO, OR NIGHT-PARROT OF NEW ZEALAND.

For the same reason that the Owls and the Falcons are grouped as distinct families, we shall consider the KAKAPO, OR NIGHT-PARROT OF NEW ZEALAND (*Strigops habroptilus*) as the type of a peculiar race. This bird, indeed, reminds us so forcibly of the Owls, that were it not for the structure of the foot, we should decidedly class it as one of them. Its scientific name of "owl-faced" (*Strigops*) is very well chosen. The large body of this species is covered with soft, delicate feathers, which form a rudimentary veil about the face; the wings are short and trough-shaped; the tail long and rounded; the beak long, bent like that of an owl, and nearly covered with stiff, bristle-like feathers; the feet are of middle size, the toes long. The general colour is a dark green, interspersed with tolerably regular stripes, and some irregular yellow spots; upon the breast the colour is lighter and yellower than on the back, and the stripes are indistinct; the green tail is banded with dark brown. The habitat of the Kakapo is restricted to New Zealand, and the species is now found in tolerable abundance only in the most remote Alpine valleys of the southern island. It has been nearly exterminated in the northern portion. Lyall and Haast have given us full particulars of its habits. "The Kakapo," says the first of these writers, "is still found occasionally in the northern districts of New Zealand, frequenting the dry cliffs or the low grounds near the banks of the rivers, where the high trees and woods are, to some extent, free from ferns and brushwood. The first time we met with it was upon some hills, rising 4,000 feet above the level of the sea; but we afterwards found it living with others of the same species, on open spots near the mouth of the river, and not far from the coast." "Most striking," adds Haast, "is the fact that the Kakapo (except in the valley of the Makavora, formed by the Lake Wanaka) is never seen east of the mountains, although forests abound there; apparently the absence of woodland in the intervening district is an obstacle to its farther progress in that direction. These birds are less numerous in the Wilkin valley, where I have observed traces of the wild dog; in the valley of the Hunter, which is only separated from these districts by a chain of not very high mountains and some inconsiderable hills, no trace of them is to be found, although the fine beech forests offer them a favourable retreat." "In such places," says Lyall, "the tracks of the Kakapo were visible; these are about a foot wide, very regularly worn, and often resemble in so striking a manner those made by men, that at first we really believed that the natives must have been in the neighbourhood. The Kakapo lives in holes under the roots of trees, and in the cavities of overhanging rocks."

Lyall tells us that the holes he saw had two openings, and the trees above them were for some distance hollow. The Kakapo, he says, was not visible by day, except when driven from its retreat; and he was never able to find it but with the help of dogs. When these birds were more plentiful, the natives used to catch them at night by torch-light. There is a breed of half-wild dogs in the northern part of this island continually hunting the Kakapos, which, indeed, they have almost exterminated. It is said that the spread of these dogs is arrested by a river; but it is to be feared that so soon as they succeed in crossing that barrier, the total extinction of these birds will ensue; for although they use their beak and claws very energetically, and can make a powerful resistance, still, sooner or later, they must succumb to their four-footed enemy, and ultimately share the fate of the

MOA, the DRONTE, and other species recently become extinct. "The Maoris assure me," says Haast, "that the Kakapo is brave, and often confronts the dogs with success; but this cannot be credited if their dogs are worth anything, for mine never had any serious battle with it. At first, the dog was attacked both with beak and claws, but it soon learnt to conquer its game by biting it through the back." An idea was formerly entertained that the Kakapos were nocturnal in their habits, but our observations lead us to believe that this is not exactly the case. We generally heard their voices about an hour after sunset, in places which were rendered dark and obscured by thick foliage, and they then began to sweep about, attracted by the light. We, however, twice saw these birds during the day feeding upon the ground, and strictly upon their guard against approaching danger. On the first occasion, about noon on a cloudy day, we were returning through an open wood from the western coast, and saw the Kakapo sitting upon an uprooted tree, not far from the Haast river; as we approached, it quickly disappeared, but was caught by the dogs. The second time, on a clear day, as we entered a deep ravine, we saw one of these birds perched ten feet high upon a fuchsia-tree, the berries of which it was eating. As soon as it saw us, it fell, as though shot, to the earth, and disappeared beneath the surrounding blocks of stone. The most astonishing thing was, that the bird made no use of its wings; indeed, did not even open them to break its fall. In order to ascertain whether it would either fly or flutter, we followed, and having with us a Kakapo that had been taken uninjured by the dogs, we set it free upon a large, open, gravelly spot, where there was plenty of room to run away, if it wished to do so, or to raise itself into the air, even should it require a large space for that purpose. We were much surprised to find that it only ran to the nearest thicket, and that much faster than we could have thought possible from the structure of its toes and the bulk of its body. Its movements resembled those of a barn-door fowl. We stood on one side of it, and it appeared to us that it kept its wings quite close to the body; but one of our companions, who was behind it, observed that the wings were slightly raised, but motionless; so that doubtless they are employed more as a means of balancing the bird than to accelerate its progress. Though its shape is not suited to running, it can progress in this manner to a considerable distance, as we often saw by its tracks, which extended sometimes for more than a mile over sand and shingle down to the bank of the river. Lyall, however, has seen this bird flying, though only for trifling distances. "During our hunt," he says, "we only saw the Kakapo fly when, having climbed a hollow tree, it wished to reach another in the neighbourhood. From the first tree it flew down to the next in height, making its way up each in turn, climbing very quickly to the top by the help of its tail; the motion of the wings was very trifling—indeed, almost imperceptible.

"The cry of the Kakapo is a hoarse croak, which changes into a discordant screech when the bird is angry or hungry. The Maoris declare that the noise these creatures make is sometimes deafening during the winter, when they congregate in great numbers, and greet each other on their arrival or departure. The stomach of a specimen we killed contained a pale or almost white homogeneous mass, without any trace of flesh, so that, doubtless, its food consists partly of roots and partly of leaves and delicate shoots of plants. We observed that at one place where the birds were very numerous, a leguminous plant, growing on the banks of the river, had all its buds nipped off; and learnt from a boatman, who had lived in that place for many years engaged in the whale fisheries, that the Kakapo was the offender. We also found its beak covered with hardened dirt. This species, he told us, requires a great deal of river water in order to dilute the pulpy mass of vegetable matter in its crop. Except in two instances, in which berries had been eaten, we found the crop always filled with half-digested moss, and so distended and heavy that it weighed many ounces; the bird, moreover, appeared much smaller when the crop was emptied. The quantity of innutritious food with which it stuffs itself explains its liking for living upon the ground, and compels it to resort to wild localities inhabited by no other parrots. Another peculiarity, also perhaps a consequence of this vegetable diet, is, that instead of the soft oily fat that other birds have under the skin, it has an abundance of solid white fat; its flesh is much whiter than that of other parrots, and has a very superior flavour. We must be forgiven for observing that it is a dainty article of food for those who are wandering in these wildernesses, and we can quite believe that the Maoris smack their lips whenever the Kakapo is mentioned."

On the subject of their propagation, Lyall makes the following statement:—"During the latter half of February and the first days of March, at which time we tarried among the dwelling-places of the Kakapos, I found young in many holes, often only one, and never more than two in each. In one instance I found a single nestling and an addled egg. Sometimes, not always, I found the parent in the hole. There is no real nest; the bird only scratches a shallow cavity in the dry mass of decayed wood. The egg is pure white, about the size of a pigeon's.

"Many young birds were brought to us on board ship, but most of them died in a few days, apparently in consequence of the unusual treatment; others lived for some months. Generally, after a few weeks, their legs were crippled by confinement, either on account of the smallness of their cage, or the want of proper food. We fed them principally with sopped bread and cooked potatoes; if we allowed them to run about in the garden, they ate the grass and cabbages, and snapped eagerly at every green leaf that came in their way. A Kakapo which we succeeded in bringing alive to within six hundred miles of the English coast, ate, while we resided in Sydney, the leaves of the Banksias and Eucalypti. It seemed to relish nuts and almonds, and during the latter part of our voyage home, lived almost entirely upon Brazil nuts. On several occasions this bird was seized with cramp for two or three days, and whilst this lasted it ate nothing, cried furiously, and hacked with its bill if any one ventured to disturb it. At such times it was not to be trusted, for it bit most fiercely, precisely when least expected. Its temper was always at the best when any one took it out of its cage. Early in the morning it would busy itself, as soon as out of confinement, with the first object that came in its way, generally with our trousers or boots. The latter it much fancied—it would squat upon them, beat its wings, and give every symptom of the greatest enjoyment; it would then rise, rub its sides against them, roll on them back downwards, and kick its feet in the most lively manner. An unlucky accident caused its death."

Another of these birds, which Captain Stoke brought ashore and transmitted to the care of Major Murray, was allowed to run about the garden freely. It showed a strong liking for the company of children, and would follow them about like a dog.

The **Long-tailed Parrots** are rich in species, and present considerable variety in their dimensions, their size ranging from that of the largest Parrot to that of a Finch; but they all possess in common a graduated tail, at least as long as the body, the middle feathers of which are sometimes twice the length of those at the side. The wings, which are moderately pointed, seldom reach, when folded, beyond the first third of the tail. The beak is, as a rule, strong, almost always short, and very round, but sometimes, in solitary cases, it is long and but slightly bowed.

The plumage of the Long-tailed Parrots is very varied, still it never possesses the softness and gloss observable in the coat of the Lory. A tuft-like prolongation of the feathers is rarely but occasionally met with. It is, however, impossible to describe the plumage of this group in general terms; suffice it to say, that the hues we have mentioned as employed in the coloration of other parrots, also predominate in their feathers. The Long-tailed Parrots may be considered as the type of their order, inhabiting, as they do, all the various countries in which the race is found.

THE ARARAS.

Amongst the Long-tailed Parrots, the Araras (*Aræ*) are easily distinguished by their unusually large beak, furnished with a smooth broad summit. The lower mandible is very short, and incised or obliquely cut, without any ridge upon the chin, and having its base entirely covered by a cere. The cheeks are broad and naked, but sometimes covered with small feathers arranged in rows; the tarsus is thick, strong, and short; the toes long, and furnished with large strongly bent claws; the wings are long and pointed, and reach far down the tail, which is longer than the body. The plumage is very thick.

The members of this very conspicuous group are almost exclusively confined to the eastern parts of South America, where they inhabit the primitive forests, far from man and the turmoil of the world. Unlike other parrots, they live in little companies, which very rarely unite to form a flock. They feed principally upon fruit, are comparatively quiet, and although they exhibit but little vivacity, are as intelligent as the rest of their race.

THE SCARLET MACAW (*Ara Macao*).

This species is about 2¾ feet long, of which more than 1 foot belongs to the tail; the stretch of its wings is about 3¾ feet. The plumage is magnificent and very brightly coloured. The head, neck, breast, and belly are scarlet; the feathers of the neck and upper part of the back have a greenish edge, which becomes broader lower down. The middle and lower regions of the back, the rump, and under tail-covers are a beautiful sky blue; the upper feathers of the wings are scarlet; the middle, hinder, under, and shoulder feathers green, the latter shaded with red; the front wing-covers are ultramarine on the outer web, and on the inner pale red. The same is the case with the inner wing-covers; the middle tail-feathers are more or less red, the inner web of the quills black. On the naked flesh-coloured cheeks, which look as though powdered with white flour, are five or six rows of little pencil-shaped red feathers, implanted near the nostrils, and ranged around the eyes; the beak is of a clear horn colour, black at the point and edge, as is the lower mandible; the eyes are yellowish white, the feet blackish grey, the claws brownish black. The two sexes are alike in colour, the young birds more delicately tinted than the old ones. In the variety of this bird represented in the frontispiece to Part I., the colours are somewhat different.

The principal portion of the plumage is bright scarlet, the quill-feathers of the wings fine blue, the greater wing-coverts yellow, tinged with green, the upper and under tail-coverts blue, the two middle feathers of the tail crimson, and the remainder of the tail-feathers, which gradually decrease in length towards the sides, are partly red and partly blue; the feet are dusky black, the naked skin of the cheeks wrinkled and white, the upper mandible whitish, and the lower one black or dusky.

The Macaw was formerly to be found in the immediate neighbourhood of such large cities as Rio de Janeiro, &c., but it has long since left the inhabited part of the country. Flat, well-watered, primitive forests appear to be its favourite haunts; it will not ascend mountains, but in high, parched districts, burnt up by the heat of the sun, or in the rocky, wild parts of Bahia, its cry is constantly to be heard. "Whilst we were upon the rivers that irrigate the woods upon the coast," says the Prince von Wied, "we saw this proud red bird, and recognised it at once by its voice, size, and streaming tail, as it slowly beat the air with its long large wings, and steered its course through the blue air." "The habits of this beautiful bird," continues the same author, "resemble those of other parrots. At noon we generally saw them sitting quietly upon the strong under-branches of a large tree, the neck drawn in, and the long tail hanging straight down. Except during pairing time, they fly in small companies in search of different kinds of fruits, especially those of various species of palms, on the hard shells of which they are very fond of trying their powerful beaks. Notwithstanding the noise they usually make, like other species of parrots they become at once perfectly silent so soon as they have found a tree laden with suitable produce, and when they settle upon it, their presence is only indicated by the fall of the husks, which they bite off and throw down. During the cold season of the year we often found them busily seeking out the fruit of a creeping plant called *sphinha;* they climb up its tangled stems very adroitly, and it is then easier to shoot them than under other circumstances. Their crops were quite full of the white seeds of this plant; at other times we found their beaks dyed blue by some species of fruit that they had eaten."

Le Vaillant says, in his "Natural History of Parrots," that the Araras are stupid birds, which do not fear the hunter's gun; but we must say from our own experience that in the unfrequented woods of Brazil, where they are very numerous, these Macaws are amongst the slyest and most cunning of their race. While sitting upon a tree feeding, the whole party are quiet, or only utter a low sound, which somewhat resembles the murmur of human conversation; but during their flight, or when disturbed, their voices are loud enough. They shriek most wildly when the hunter steals upon them unobserved, and disturbs the unsuspecting company in the middle of their meal by a shot, and on such occasions often raise a deafening uproar. Their loud scream is very harsh; it consists but of one syllable, and somewhat resembles the cry of our ravens. Like all other parrots, these birds are much attached to their mates. "In April of the year 1788," says Azara, "Manuel Palomares, who was hunting about a mile from the city of Paraguay, shot an Arara, and tied it to the saddle of his horse. The mate of the dead bird followed the hunter to his home, which was in the centre of the town, and remained for several days upon the same spot; at last it allowed itself to be taken by hand and domesticated." "In pairing time," says the Prince von Wied, "the Araras endeavour to find the breeding place they have formerly occupied. The nest is always made in some large tree, that has either an open cavity or a hollow place, which they soon enlarge to the requisite size by the help of their strong beak. In this the female lays two white eggs, resembling those of most other parrots." Schomburghk tells us that the long tail of the parrot often proves fatal to the brood, by betraying the presence of its owner, as it hangs out of the hole in which the nest is situated. Azara assures us that the couple never leave the nest, dividing the care of it between them; and should any one approach, they testify the greatest uneasiness. The young do not cry out for food, but signify their wants by tapping at the sides of the tree. Like the nestlings of other parrots they are very ugly and helpless, and for some time after leaving the nest require the protection and care of their parents. The natives prefer taking them unfledged, as they are then very easily tamed. Caged Araras always seem to have been favourites with the Indians. "We saw with great interest," says Humboldt, "large Araras flying about tame in the Indian huts, as pigeons do with us; these birds are great ornaments to the Indian poultry-yard, and do not yield in beauty to the Peacock or Golden Pheasant."

It must, however, be rather dangerous to have Araras flying about in such close vicinity, if only on account of the undesirable use they often make of their formidable beaks, and yet in some instances they become very tame. An individual in the possession of the Prince von Wied had full liberty to fly about the apartments, but preferred being near its master. It allowed him to catch it, or to carry it on his hand about the room, and would stroke his cheeks in a blandishing manner with its dangerous bill.

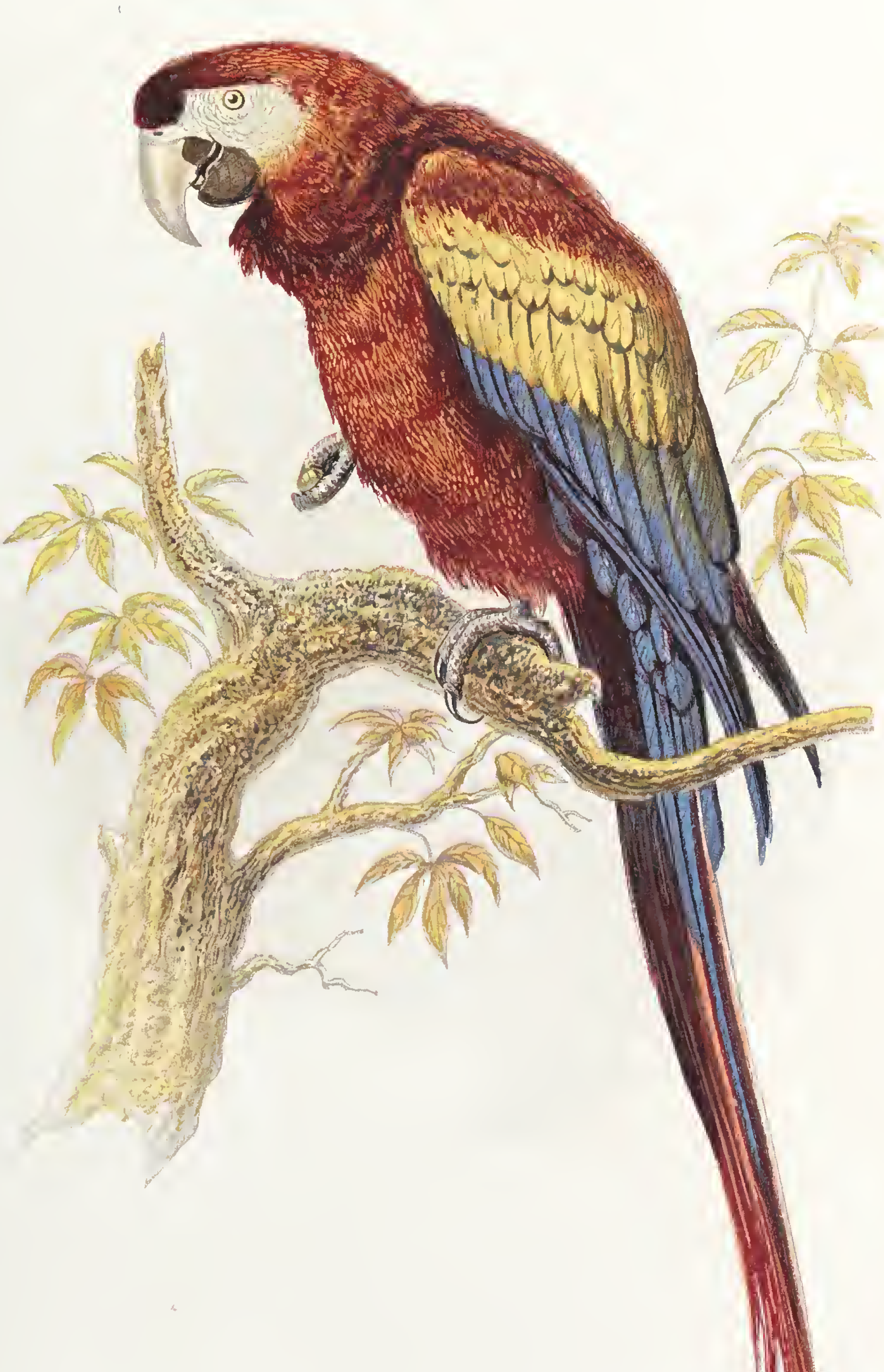
This species never learns to speak as well as other parrots, but is nevertheless not quite deficient in the necessary talents. "My Arara," wrote Siedhof, "has shown a great facility for speech, imitating my magpie, which can talk very well. For more than four months after it came to me it was quite dumb, not even uttering its frightful cry. I therefore hung it where the magpie, which chattered incessantly, would be near it, and it had been exactly ten days there when it began to imitate its companion. Now it can call my children by name, and learns directly whatever it is taught. It has, however, one peculiarity, namely, that it usually only speaks when alone." The Scarlet Arara can endure captivity for many years; we have heard of one that was kept forty-four years in the same family. The Scarlet Macaw is sought after with equal zeal both by white men and natives; and the European sportsman rejoices when a well-directed shot puts him in possession of one of these magnificent birds. "Carefully," says the Prince von Wied, "and concealed by thick bushes or trees, the hunter creeps towards them, and sometimes brings down several at one shot. If wounded, the bird clings to the branches by its strong beak and claws, often hanging a long time in that position. Should the pursuer obtain the desired booty, it furnishes him with most agreeable food; the flesh is very like beef; that of the old birds is tough in winter, and often very fat; but when cooked it makes excellent soup. The beautiful feathers are used in many ways; every native who has killed a macaw decorates his head-dress with the brilliant red and blue plumage. The Brazilians make pens of the quills from the tail, and many savage tribes employ the other feathers as ornaments. The dark ones from the tail are selected to feather their arrows. Even at the present time many deck themselves with these magnificent plumes. Formerly the tribe of the Lingoes manufactured ornamental articles from these feathers, which they kept, until wanted for use, in boxes closed with wax. The Tapinambes on the eastern coast, when making a feast on the death or devouring of an enemy, began it in very festal array; the slayer of the deceased was rubbed with a certain kind of gum, and then thickly covered with small Arara feathers; on his head was a crown, formed of the tail of this beautiful bird."

THE SOLDIER ARARA.

The SOLDIER ARARA (*Ara militaris*), a magnificent bird, is not inferior in size to the species described above. The general colour of its plumage is bluish green; on the under side, and over the joints of the wings, this is mixed with brown; the cheeks are white, with several rows of small brown feathers; a narrow strip of blood-red feathers runs across the forehead; the wings are blue on the outer side, beneath they are of a greenish yellow, black at the edge; the prevailing colour of the tail is red, blue at the tip, and beneath greenish yellow; the outer feathers are blue on both sides; the beak and feet are black. This species is spread over the district near the upper part of the Amazon, and reaches northward as far as the United States.

THE ANAKAN.

The ANAKAN (*Ara severa*) is only 1½ feet in length, its breadth 2¼ feet; the tail measures nine inches, and the wings ten inches. The Anakan is altogether more slenderly built than any of its congeners with which we are acquainted, and its colours are less brilliant. The plumage is usually green, shaded into blue on the top of the head; the forehead is reddish brown, the wings blue above and dull red beneath; the primaries blackish on the inner border, the secondaries green at the edge, blue at the tip, in the middle bluish crimson. The beak is black, grey at the tip; the cere and the bare cheeks, which seem to be covered with rows of small pointed black feathers, are of a yellowish flesh-colour, as are the eyes; the feet are black. The Prince von Wied found the Anakan, which is spread over all the tropical regions of America (the islands included), principally in the primitive forests, in the vicinity of rivers. It lives on the highest



ARARA MACAO. SCARLET MACAW.

(about [illegible] quarters [illegible] size)

THE SCARLET MACAW (*Ara Macao*).

trees, and is often seen perched upon the branches, sometimes even in heavy storms of rain, which it willingly allows to soak its feathers. During the breeding season it lives in pairs, at other times in flocks.

The Anakans search the woods for fruit, and very often do great damage to the maize; their flight is astonishingly rapid, and their voice loud and harsh, but shriller and weaker than that of the large Araras. When a party of these birds is perched upon a tree, they utter soft, strange notes, as though talking together, the sound resembling the murmur of conversation. The male and female often sit in pairs on the high branches. The flesh of this bird is much esteemed, both by natives and Europeans, and, indeed, is excellent.

In the Macaws we have been describing, the prevailing colour of the upper feathers is a more or less bright green; but in the following genera blue predominates.

THE ARARAUNA.

The Ararauna (*Ara Sittace Ararauna*) is a very well-known bird, not inferior to any of the preceding in magnificence. The body is somewhat smaller, the tail, on the contrary, longer, than in the Scarlet Macaw; it may be reckoned as thirty-seven inches long, of which quite twenty inches belong to the tail; the wing measures twenty inches from the shoulder to the tip. The eye is greenish white, the beak and shoulder black. The forehead, a great part of the tail, and also a ring round the throat, are green. This colour changes above into light blue, whilst the under side is of the colour of the yolk of an egg; the same is the case with the tail. The upper and under tail-covers are blue. The outer webs of the wings are darker, those of the inner webs almost black, but only on their upper surface, for the under side shades off into dull yellow; the same is the case with the tail-feathers. The lower part of the face is more darkly coloured than the upper throat; the chin is almost black, the bare cheeks are white, with three rows of blackish feathers.

According to the statements of travellers, the habits of the Araraunæ are very similar to those of the Scarlet Macaw. The extent of country over which they are found is not exactly known. Schomburghk saw them sitting in considerable numbers on trees upon the banks of the Rio Takutu. They are seldom found on the eastern coast, and have long been driven from the inhabited districts.

THE HYACINTH-COLOURED ARARA.

The Hyacinth-coloured Arara (*Anodorhynchus hyazinthinus*) has with great reason been regarded as the type of a peculiar race, for this bird differs from the rest of its family in the same way as the Nose Cockatoo differs from its fellows. The highly curved upper mandible is of considerable size, and much stronger than in other macaws, with a sloping, elongated hook at its extremity, which bends in the shape of a sickle over the under beak. The cheeks are thickly feathered, and only a small circle round the eyes and another round the under beak is bare. The plumage is of an uniform ultramarine, the crown, neck, wings, and tail are more darkly coloured than the throat, breast, and belly; in some lights it shimmers with pale sky blue. The wings on the lower side, the inner webs of the wing-feathers, and the under side of the tail, are pale black; the outermost wing-feathers sprinkled with black. The beak is of a brilliant black, the feet greyish black, and the eyes brownish black. The naked place near the eyes, and also a narrow featherless border around the beak, are dark yellow, lightly powdered. In size, this species is scarcely inferior to the Macaw;

its length is thirty-eight inches, of which the tail measures twenty-two. The length of the wings is sixteen inches.

Little is known of the habits of the Hyacinth-coloured Arara; we learn that it is principally found in the river districts of Rio de Francisco, and from thence to the Amazon. These birds are not very numerous, and are constantly seen in pairs instead of flocks. In comparison with the rest of their family, they have little shyness, and their voices are seldom heard.

We may consider the PARRAKEETS, or CONICAL-TAILED PARROTS (*Conurus*), although much smaller, as the next relations to the Araras, from which they are easily distinguished by the circumstance that their cheeks are feathered. Some have a bare circle round the eyes, whilst in the smaller kinds the feathers reach quite to the eyelids. The beak is comparatively strong, but short and broad; the cere is thickly feathered, and the nostrils, which are placed in the middle of the forehead, are surrounded with bristle-like feathers. The plumage is generally green, and relatively simple; still there are very magnificent species among them. Such an one is

THE GARUBA.

The GARUBA OF BRAZIL (*Conurus luteus*) is a splendid bird, of bright egg-yellow colour, only varied by the green and black upon the wings and tail. The head and wings are usually of a brighter colour than the rest of the body; the wings are externally green, tipped and bordered with black; the beak greyish horn yellow; the foot flesh-coloured, varied with grey; the narrow bare places round the eyes whitish; the eyes are dark orange. Its length is fourteen and a half inches, six inches of which belong to the tail. The length of the wings is about the same. The north of Brazil, particularly the country near the Amazon, is the principal habitat of the Garuba, but nowhere is it found in great numbers.

THE TIRIBA.

The TIRIBA (*Conurus leucotis*), a bird only nine inches long, four inches of which must be reckoned for the tail, is certainly the most elegant and charming of all parrakeets. The crown is brown, and shines with a metallic bluish green lustre; the rim round the forehead, the cheek-stripes, the cheeks, and the throat, are cherry colour. The part near the ear is white; the neck, rump, and wings dark green; the point of the tail and the middle of the belly, as well as the wings near the shoulder, are red; the breast is olive green; and the feathers on the upper part of the neck are indicated by a black-edged stripe, prettily marked. The wings are externally bluish green, and black within. The tail is green, the upper part touched with cherry colour, and the lower part with blood red; the horn-grey beak terminates in a white point. The feet are dark ash grey, and the eye-rings orange; the narrow bare place around the eyes is blackish. The female is somewhat smaller than the male, from whom she differs but little in colour. In the young birds the tints are paler, and the feathers only slightly marked.

The Tiriba is met with in many parts of the eastern coast of Brazil; these birds abound in forests, and particularly in such as have not been cleared; they are also found in great numbers on the sea-coast, and at no great distance from human habitations. Except in pairing time, they are always in large flocks, and if disturbed dart like arrows from the tops of the trees, shrieking loudly. They climb very dextrously, employing the beak freely, and carefully guarding their long tail from being injured by the branches. It is very difficult for the sportsman to distinguish them in their haunts, on account of their green colour, and if they fear danger they will remain perfectly motionless and quiet. It is only when flying that they raise their voices loudly and repeatedly. When there are plantations near the woods, they will, like other parrots, do considerable damage, but are less destructive to maize than to rice. After breeding time they appear more numerously on the outskirts of the woods, accompanied by their young, whom they feed out of their crops until they have nearly attained their full size.

The nest is built in the hollow of a tree, and contains from two to three white eggs. Some species, according to Schomburghk, are favourites with the Indians, so that we often find whole flocks of tame parrakeets near their settlements. The Brazilians generally place them on a stick, which they fasten to the outside of their houses, fixing one end into the plaster wall.

THE GARUBA (*Conurus luteus*).

THE CAROLINA PARRAKEET.

The CAROLINA PARRAKEET (*Conurus Carolinensis*) is the only parrot found in North America. Its length is from ten to twelve inches, and the wing seven inches; the prevailing colour of the plumage is a pleasing green, darker on the back, and somewhat yellowish on the under part; the forehead and cheeks are reddish orange, as are likewise the back of the head, shoulders, and wings. The neck is of a pure gold colour; the large wing-covers olive-green, with yellow tips; the primary quills deep purplish black; and the middle tail-covers near the shaft blue. The female is of a paler colour than the male, and in the young the forehead is of an uniform green.

The Carolina Parrakeets are found as far as forty-two degrees north latitude, and seem to be capable of enduring very severe weather, for Wilson tells us that he saw a flock of them fly screaming along the banks of the Ohio, during a snow-storm in February. Solitary individuals are sometimes met with still farther north, even as far as Albany; but these are only such as have lost their way. The favourite haunts of these birds are districts overgrown with a weed called wrinkled burdock, the seeds of which they obtain in spite of its armature of strong thorns; they often invade plantations in great numbers, and do much damage, destroying far more than they eat, and are therefore bitterly hated by the owners, and actively pursued.

We have full particulars of their life and habits from Wilson, Audubon, and the Prince von Wied. "The Carolina Parrakeet," says Audubon, "eats or destroys all kinds of fruit, and is on this account most unwelcome to the planter, the countryman, or the gardener. The stacks of corn in the fields are often visited by large flocks, which hide them so completely that they present the appearance of being covered with a brilliantly coloured carpet; the birds hang round the stacks, draw out the straws, and destroy twice as much of the corn as is necessary to satisfy their hunger. They come in crowds to assail the fruit trees in a garden, pluck the fruits, bite them open and take out the soft and milky kernel, proceeding industriously from branch to branch, until the tree that had looked so promising is entirely stripped. It is easy to understand that these attacks upon their property are avenged by the planters, and that regular war is waged against the Parrakeets. Ten or twenty of them often fall at one shot, but the survivors always come back to the same place, so that many hundreds are killed in the course of a few hours." The Carolina Parrakeet," says Wilson, "is a very sociable creature. Should one of a flock be wounded, the rest instantly return to it, uttering loud anxious cries, as they settle on the nearest tree. After repeated shots they will not alter their behaviour, but come nearer and nearer to the fallen bird, and fly around it with plaintive screams."

It would be hard to find a greater contrast than is noticeable between the rapid flight of the Carolina Parrakeets and their lame, helpless movements when on the branches of trees, and still more when on the ground. They fly in closely-packed masses, rushing along with loud resounding cries, generally in a direct line, sometimes in graceful curves, which they seem often to vary for their own amusement. Their favourite trees are sycamores and plantains, in the hollows of which they find a resting-place, and hang to the bark like woodpeckers, clinging by the beak and claws. They sleep a good deal, retiring many times in the day to their holes to take a nap. They eat salt readily, and for this reason are always to be found in great numbers near salt works. Wilson gives us the following information concerning a Carolina Parrakeet that he tried to keep:—"As I was anxious to learn whether this parrot would allow itself to be easily tamed, I took one under my care that had been slightly wounded in the wing. I prepared for him a kind of bower at the stern of my boat, and threw him burdocks, which he continued to eat from the time he came on board. The first day was pretty equally divided between eating and sleeping, and at times he gnawed the bars of his cage. When I left the river and travelled by land I carried my prisoner with me in a silk handkerchief, disregarding all the difficulties which such an undertaking must involve. The road was bad beyond description; there were dangerous rivers and lakes to swim across, whole miles of morass and thicket to encounter, and other hindrances to overcome; many times the parrot came out of my pocket, and I was compelled to dismount to seek for it amongst the brushwood. When we encamped in forests I placed it on my little bundle near me, and took it up again in the morning, carrying it in this manner more than a thousand miles. As soon as I reached the hunting-ground of the Chickasaws I was surrounded by these people—men, women, and children—who regarded my companion with great astonishment and loud laughter, calling it in their language 'Kelinky;' indeed, Polly was ever after a bond of friendship between us. When I reached my friend Dunbar's house I procured a cage, and placed it in the verandah; from whence my captive used to call to the flights of Parrakeets that sped over the place, and day by day we had numerous troops of them hovering about, keeping up a lively conversation. One whose wing was slightly wounded I placed in Polly's cage, to the great delight of the little solitary, who approached it instantly, and whispered her sympathy at its accident, stroked its neck and head with her beak, and took it to her heart at once. The new comer died, and Polly was for many days inconsolable and restless. I then placed a looking-glass near to the place where she usually sat. My ruse succeeded, her happiness was restored, and for a time she was beside herself with joy. It was quite touching to see her, as evening approached, laying her head on the image in the glass, and testifying her happiness by a gentle note. After some time she learned her name, and answered to it; she would climb up my body, perch on my shoulder, and take bits from my mouth: there is no doubt that I could have succeeded in training her, had not an unlucky accident caused her death; she left her cage one morning before I rose, and was drowned in the Gulf of Mexico."

The Prince von Wied substantiates the preceding account; he found these Parrakeets in the early spring in enormous numbers near the Mississippi, and they have been also seen near the Lower Missouri, but never towards the upper part of that river. The Indians in the neighbourhood of Fort Union wear the skins of these birds as ornaments on their heads.

THE CHOROY.

The CHOROY of the Chilians (*Enicognathis leptorhynchus*) is well deserving of notice, on account of the peculiar shape of its beak. There is nothing particularly striking in the plumage, which is of a nearly uniform dark green, blueish on the wings, their tips being spotted with black; the tail-feathers are brownish, and blood red at the tip. The bird is green above, with a red streak upon the brow, red cheek-stripes, and a few insignificant dark bands on the top of the head, which are visible through the points of the corresponding feathers; the lower part of the body is green, with red spots between the thighs, larger in the male than in the female. Its length is about fourteen inches, six and a half of which belong to the tail. The Choroy reminds us of the Long-beaked Cockatoo, on account of its prominent and elongated upper mandible, and we are told that its habits are similar. These birds congregate in troops of many hundreds, and the noise they make is almost deafening. They are most destructive to maize and wheat fields, and also to apple-trees, the fruit of which they gather only for the sake of the pips. This species is found over large tracts of the Pampas, and is rather a ground than a tree bird.

THE LONG-TAILED PARROTS, OR PARRAKEETS.

THE LONG-TAILED PARRAKEETS (*Palæornithes*) inhabit the Old World, and notwithstanding the peculiarities whereby the different families are characterised, bear a common impress. All are distinguished by their very slender shape and pointed tail of the same length as the body, and by their flowing, magnificently-coloured plumage. They are distributed over the whole of Central and Southern Africa, a great part of India and Australia, and in favourable situations are met with in large flocks. The Australian type differs from the Asiatic and African principally in having a comparatively broad tail, and is on that account often referred to another group.

THE COLLARED OR ROSE-RINGED PARROT.

The Collared Parrot (*Palæornis torquatus*) is elegantly formed and strikingly coloured. The entire length of the male is from fourteen to sixteen inches, ten of which must be allowed for the tail; the length of wing is about six inches from the shoulder to the tip. The colour of the plumage is generally a bright grass green, brightest on the top of the head, palest underneath, and darkest on the wings: on both sides of the throat, and about the cheeks, this colour changes to a delicate sky blue, which is divided from the green of the neck by a dark blackish stripe on the throat, and a splendid band of rose red feathers; the tips of the tail-feathers are also sky blue, and the under part of the tail and wings yellowish green. The beak is bright red, with a dark tip to the upper mandible, the feet grey, the eye yellowish white. The young birds before moulting may be distinguished from the old by their paler and uniform light green colour.

The Rose-ringed Parrakeet is spread over the whole of Africa, and is found from the western coast to the eastern borders of the Abyssinian mountains, the wooded parts of which are especially favourable to its mode of life and habits; it does not always seek the extensive unbroken primitive forests, which cover the lower parts of the interior of Africa, but is often seen in limited tracts of woodland, among the thickly-foliaged evergreens, which afford a safe retreat during the entire year. In Western Africa it is seen on the coast; in Northern Africa we have found it as far southward as fifteen degrees north latitude, but did not observe it in those parts of the mountainous coast of Abyssinia through which we travelled, and only met with it in the neighbourhood of monkeys; indeed, after repeated observations we concluded that we could safely reckon upon always finding it where monkeys were to be seen, and *vice versâ*. It would be difficult for travellers through their haunts to overlook the Rose-ringed Parrakeets, as they announce their presence by loud, discordant cries heard above all the noises of the forest; their associated bands, after uniting and thus increasing to large flocks, often take possession of some of the thickly-leaved tamarind or other trees, and from these resting-places fly daily across a greater or less tract of country. In the early morning they are tolerably quiet, but soon after sunrise go forth screaming in search of food, and the whole flock may then be seen flying hurriedly over the woods. The African forests are comparatively poor in fruit, but the plants that grow under their shadow are prolific in seeds of all kinds, which entice the parrots to the ground; nevertheless, except when the small round fruit of the bush known as "Christ's thorn" is ripe, they seldom descend from the trees. It is probable that they will also take animal food; at any rate, we have often observed them busy near ant-hills and the dwellings of Termites. They are rarely seen in the fields bordering on the woods of Central Africa, although tame birds may be fed solely upon the Caffre millet and durrah, the corn of that country; it would seem, however, that they prefer fruits and seeds to the last-mentioned diet.

Until mid-day the flocks are busy satisfying their hunger, after which they fly to seek water, and then rest for some hours among the branches, chattering and screaming; but in spite of their noise they are difficult to find, owing to their green colour, which is scarcely distinguishable from the foliage; moreover, they are perfectly silent the instant that they observe anything unusual, or creep stealthily and quietly away if they fear pursuit. The longer you remain under a tree beneath the top of which you have just heard hundreds of voices, the stiller and quieter it becomes, until at last all is silent; one bird after the other has noiselessly crept away to a distance, from whence a joyful cry tells that their cunningly planned retreat is happily accomplished.

Towards evening they again assemble, and make (if that is possible) a louder shrieking than before; for now the question is not only which is the best branch to rest upon, but the safest sleeping-place. During the spring time, when the woods are decked in magic beauty, the parrots always sleep in holes in trees, but in the dry season they prefer the foliage; leafless trees they consider dangerous.

Although these birds fly well, their movements on the ground are clumsy, and even their climbing very awkward; their flight is extremely swift, but seems fatiguing; it requires many quick strokes with the wings, and changes into a hovering motion if the bird wishes to alight. Their gait can scarcely be called a walk, but rather a waddle; the body is swung forward, and the long tail carefully raised that it may not touch the ground. A party of Parrakeets progressing in this manner provokes involuntary laughter, as there is something most comically serious in their movements.

The Rose-ringed Parrots breed during the African rainy season, which comes with the spring; at which time the gigantic Adansonias are crowned with their thickest foliage, and the numerous holes in their trunks hidden in the most desirable manner; here the breeding birds settle in parties, and after some strife about holes, the pairs live quietly together. In those parts of Africa through which we travelled, Europeans shoot these birds, but the natives never molest them with weapons, and only capture them when they have an opportunity of disposing of them alive. Notwithstanding the numbers in which they are found, it is not very easy to procure a specimen, as their cunning deceives even a practised sportsman, and renders his efforts fruitless. After some time, however, we learned to turn their tricks to their own disadvantage; when we found a party of them in the woods, one of us would creep to the nearest and thickest tree, while another disturbed that they were on; the consequence was that the parrots, as they tried to escape, generally fell victims to the marksman who was watching their arrival.

The natives take the young unfledged birds out of the nest, or surprise the old ones at night in their holes. They are extensively captured in Senegal, and from thence come most of the Rose-ringed Parrakeets that we see in captivity. During the time we spent in Africa, we had many of these birds alive, but never succeeded in becoming very friendly with them; we gave them as much freedom as possible, allowed them to fly about a large room, fed them well, and hoped to retain the whole troop; but we were sadly deceived in our expectations, for they fell murderously upon each other, and the strong ones bit the weak to death; in most cases they broke the skulls of their victims, and ate their brains, after the manner of our Titmouse (*Parus*).

On the other hand, we must own that we have often seen bird-fanciers keep dozens in small cages, and learnt, in answer to our questions, that they lived together in the greatest harmony. Connoisseurs have told us that with care they can be made very tame, and will show great affection for their master, but rarely learn to speak, or only in the most imperfect manner. Their plumage forms their greatest attraction.

THE BETTET.

The Bettet (*Palæornis pondicerianus*), together with other allied species, is found throughout India and the neighbouring islands. In size it resembles the Rose-ringed Parrakeet, but differs from it in the markings of its more variegated plumage. Green is also here the prevailing colour, but the delicate rose red that marks the neck of the former is in this bird spread over the whole breast, and, in the male, extends over the top of the head. The whole mantle is green, the sides of the wings yellowish green, and here and there the feathers have more or less broad yellow edges; the tail-feathers are blueish green above, on the under side yellowish green; the belly is green, but much paler than the back. The head and breast contrast splendidly with these leaf-like tints; it is difficult to describe the mixture of colours they present; we can only say that the head is of a blueish or greyish rose red, while a narrow band on the forehead, and the marks on the cheeks, heighten the effect of the bright and glowing tints on the neck. A line on the forehead, which reaches to the eyes, and the streaks upon the neck, are of a dull black ; the breast is of a pale brick red ; all the feathers having narrow grey edges to their tips, as though suffused with a greyish vapour. The beak is black, the feet greenish yellow, the eyes yellowish grey. The two sexes are distinguished by the colour of the head, which in the one has a reddish and in the other a greenish lustre. We have one of these birds alive before us, but cannot say whether the red-headed is, as we fancy, the male, or the female ; the colours of both are equally beautiful. Bernstein tells us that although this parrot is principally seen in Java, its distribution is very unequal, for whereas in some parts it is quite a common bird, in others it is not to be found without strict search. It inhabits hot low-lying districts, or sometimes promontories to the height of 4,000 feet, but never frequents mountains. It is always to be met with in the coffee-plantations, where it soon betrays its presence by its loud screaming voice, although it knows so well how to conceal itself from observation amongst the foliage, that it is much oftener heard than seen.

During the day Bettets fly in pairs or small parties through the gardens or thickets in the neighbourhood, and towards evening assemble upon their trysting-place—a large, thickly foliaged tree, or bamboo plantation—where they pass the night together. "If you happen to know such a tree," says Bernstein, "and place yourself near it towards evening, you will see a very attractive exhibition. When the sun goes down, the birds come gradually from all sides ; as soon as the first has arrived, it raises its voice joyfully and commences a performance in which all new comers join, so that at last the concert increases to a perfectly deafening noise, which only ends as the last ray of sunset disappears. Then all go to roost, and are only disturbed when a solitary bird, whose little sleeping-place is not comfortable, flies about to seek another perch, or drive a companion from its place ; should this happen, the general annoyance is loudly expressed, and the disturber of their repose soon settled with a few sharp pecks. With the first appearance of daylight, the flock separates until the following evening, when all seek the same tree or bush, and pass the night together as before."

During the breeding season these birds live in pairs, and the evening assemblies do not take place. The nests are made in holes of trees, and the strong beaks of the parrots are very useful in preparing them. We only succeeded in finding one nest, and that was in a hollow in a Puda tree some forty or fifty feet above the ground ; it contained but one pure white egg, but the ovary of the female showed plainly that there were more eggs to lay. The Bettets we have seen in captivity were very tame, and appeared mild and gentle in their demeanour ; we learnt from trustworthy sources that they may be easily taught to speak very fluently.

Among the Australian parrots the SUPERB PARROTS (*Polytelis*) remind us most of those just described. The only two known species are moderately large birds from fifteen to sixteen inches in length, slenderly formed, but with tolerably strong beaks, the upper mandible reaching far over the lower one.

THE SCARLET-CRESTED SUPERB PARROT.

In the SCARLET-CRESTED Species (*Polytelis Barrabandi*) the plumage upon the back of the neck, upper and lower parts of the body, is grass green ; the fore part of the head, the cheeks, and the throat, king's yellow ; the wings and tail deep blue, shaded with green ; the neck surrounded by a crooked line of scarlet ; the eyes are orange ; the beak bright red ; the feet ash grey. The female is distinguished by its somewhat less brilliant plumage, its dull blueish grey face, its dusky rose-red breast, and scarlet loins. The young resemble it in colour, but are less beautifully marked. This bird is not rare in New South Wales, and in the interior is tolerably numerous.

THE BLACK-TAILED SUPERB PARROT.

The BLACK-TAILED SUPERB PARROT is found in numerous flocks on the banks of the Murray, and lives principally among thick shrubs and upon the gum-trees. Its food consists of seeds, buds, and the honey which it obtains from the blossoms of the Eucalypti. Its flight is very rapid; its voice a loud screaming cry, which becomes a discordant chatter when a flock settles.

We are more intimately acquainted with the so-called GRASS PARROTS (*Platycerci*), a beautifully marked, small-beaked, high-footed race, whose short tail is broader at the end than at the root. They are found in New Holland, distributed over the whole of that continent; and, as they keep together in flocks, are very troublesome to the settlers. In their habits they have much in common with the Sparrow Parrots and with the Finches. They run more than they climb, frequenting the country roads, like our sparrows, the fields, like our finches, or the grassy plains, like the reed sparrows, and are only found in the woods, or on solitary trees, during the time that they roost. They wander much about the country, and appear unexpectedly in great flocks in certain places, which they leave as suddenly when food becomes scarce. Most species eat seeds exclusively, preferring those of different kinds of grass. They differ remarkably from other parrots in the circumstance that the female lays from six to ten eggs, and rears a numerous family. They can generally endure captivity, but do not enjoy the company of mankind, and seldom learn to distinguish their friends from those whom they have cause to fear.

THE ROSELLA.

The ROSELLA (*Platycercus eximius*) is a truly splendid bird, thirteen inches in length. The fore part of the head, back of the neck, breast, and under tail-covers, are scarlet; the cheeks white; the feathers on the back black, bordered with yellow; the rump, upper tail-covers, and belly, with the exception of a yellow spot in the middle, are of a bright pale green; the middle of the wings bright blue; the quills dark brown, the outer border blue; the two middle tail-feathers green, changing to blueish-green; all the rest blue at the root, shading into light blue, and tipped with white; the beak is horn-coloured; the foot brown; the pupils blackish brown. The young, when they leave the nest, have a coat very similar to the old birds, without its full brilliancy; they are also recognisable by their yellow beaks. These beautiful parrots are natives of New South Wales and Tasmania, where they are very common, but only in especial districts, often bounded by a brook, over which they will not pass. They do not congregate in large flocks, but in small groups or families. Open countries are their favourite resorts, or grassy hills and plains planted with high trees or groups of bushes. From these trees, which become the central point of their movements, they fly over the little sandy plains or open country into the woods to seek their food. They are as often to be found upon the roads as our sparrows, and, like them, if startled, only fly to the nearest tree or hedge by the wayside, soon returning again to the ground. Travellers are unanimous in saying that the impression made on Europeans by the profusion of these magnificent birds surpasses description. The Rosella flies in curves, with rapid strokes of its wing, but seldom to any great distance, as it is soon fatigued; it moves with ease upon the ground, and is quite equal to our Finches in agility. The voice of this species, like that of most of its congeners, is a pleasant pipe, which might almost be called a song. Its food consists of seeds of different kinds, principally those of grasses; but it will also at times eat insects; the breeding-time is in the months of October and January, which answers to our spring. The female lays from seven to ten beautiful elongated white eggs in a hole in the branch of an Eucalyptus, or some similar tree.

THE VARIEGATED PARROT.

The Variegated Parrot (*Psephotus multicolor*) must be regarded as one of the most splendidly coloured of the Grass Parrots, amongst which it is numbered on account of its moderately short wings and unevenly graduated tail. It is about a foot in length, and nine to ten inches in the spread of its wings. This bird inhabits the interior of Australia, being very numerous on the banks of the rivers. The plumage is remarkable on account of the variety of its colours. In the male the forehead and shoulders are brimstone-coloured; the under tail-covers yellow; the lower part of the belly and legs scarlet; the rump striped with yellowish green, dark green, and reddish chestnut brown; the wings and lower wing-covers deep blue; the middle tail-feathers blue; the outer ones blueish green, tipped with pale blue; the beak horn brown; and the feet yellowish brown. The female, whose plumage is similarly marked, only differs from the male in the inferior brilliancy of colouring, being of a yellowish brown on the throat and breast, and only slightly striped on the back of the head and wing-covers. We have but slight knowledge of these birds either in their natural state or in captivity.

The Variegated Parrot is, undoubtedly, one of the greatest acquisitions that a connoisseur can make; it is the ornament of every aviary, and, like its congeners, pleases as much by its docility as by the splendour of its plumage. It will also breed in our own country. "My father," says Neubert, "possessed a pair of Variegated Parrots, which were always very cheerful and extremely attached to each other. One was a little larger than the other, and in colour far more beautiful, for that which in the little one was yellow and orange, was in the larger bird orange and flame colour, and so on throughout the different tints. On account of this circumstance, these birds were always supposed to be male and female, and this opinion was strengthened by observing that they showed the greatest affection for each other. After a time the lesser bird—whom for the sake of brevity we will call the female—was always busy on the ground; it seemed melancholy, and ate scarcely anything, but was constantly fed by the male out of his crop. One morning there lay a beautiful white egg in the cage, which the female watched most carefully. My father at once fastened a willow basket to the cage, filled with materials for a nest, and placed the egg upon it; the female, however, lifted it again to the bottom of the cage. On this we gave them a common wooden box, in which a hole was cut, and filled it with soft materials; both birds immediately busied themselves in turning them out, and in chipping some very fine shreds off the inside of the box, on which to lay the egg. From this time the female seldom came out of the box, but the male frequently went in to feed her. Several other eggs were laid during the next few days, some being larger than the rest. The devotion of both birds to the task of incubation increased daily, and they became so heated as to lose the feathers from the under part of their bodies. As time went on, neither of them came out, or only very rarely, to eat. At length we observed that one was dead; the other continued to sit upon the eggs, but died after a few days. The eggs were examined, and proved to be addled. It was only on the birds being stuffed, that the reason of our disappointment was discovered; both were females, and had laid unfertile eggs. Many English and Belgian collectors have succeeded in making the Variegated Parrots lay, so we may hope to see these beautiful birds more numerous amongst us."

The Australian continent would seem to be a veritable Eden for the Parrot tribes! The dazzling Cockatoos peep like gorgeous flowers from the masses of green foliage, and the Scarlet-coated Rose Parrakeet glitters amongst the yellow blossoms of the acacia, whilst Honey-birds swarm in blithe and busy parties about the various trees, and the otherwise deserted plains are animated by the presence of the little Grass Parrakeets. Parrots abound in Australia, as do the swallows in our villages and roads, and are met with everywhere in all their variegated beauty. When the farmer is about to get in his harvest, these birds appear before his barns in large flocks, seeking, like pigeons, for stray corn among the stubble. Poetical travellers have often been inspired by the ever varying spectacle presented by such gorgeous objects; but the settler hates them from the bottom of his heart, and avenges himself for their depredations by shooting them with the same indifference as that with which our country folks kill sparrows.

THE WAVED PARROT (*Melopsittacus undulatus*).

This beautiful bird is of small size, though its long tail makes it seem larger than it is; its length is from eight to nine inches, and the span of its wings ten inches. The body is slender and elegantly formed, the tail long and graduated, the wings comparatively long and pointed, the beak moderately large, with a long curved point. The cere, in which the large nostrils are placed, is broad and slightly inflated; the feet long, the toes slender, the outer one being longer than the inner. The beautiful grass green that predominates in the plumage is prettily marked; the whole of the mantle—that is, the back of the head, neck, top of the back, shoulders, and wing-covers—are pale yellowish green, each feather being edged and spotted with black and brown, more finely on the neck and head than on the back; the under side is of a beautiful uniform green. The parts of the face, that is, the fore part of the head, vertex, and throat, are yellow, bordered and spotted with four bright blue spots, of which those upon the cheeks are the largest, while the others look like three little round drops. The wings are brown, the outer web of the quills dark grey, spotted with greenish yellow; the tail, with the exception of the two blue middle feathers, is green in the middle. Each feather is striped with yellow, the eye-rings yellowish white, the beak horn-coloured, the feet pale blue. The female is distinguished from her mate in being somewhat smaller, and

THE ROSELLA (*Platycercus eximius*).

by the different colour of the cere; with her this is greyish green, whilst in the male it is a bright blue. The young are without the deep blue spots on the throat, and the regular markings on the head, which is entirely covered with delicate stripes; when only eight months old, they assume the plumage of the parent birds.

Shaw was the first naturalist who became acquainted with and described the Waved Parrot, and Gould is the only traveller who gives us any information respecting its natural state; from him we learn that these birds inhabit the whole of the interior of Australia in enormous numbers, especially where there are large tracts of grass, the seeds of which they eat.

THE WAVED PARROT (*Melopsittacus undulatus*).

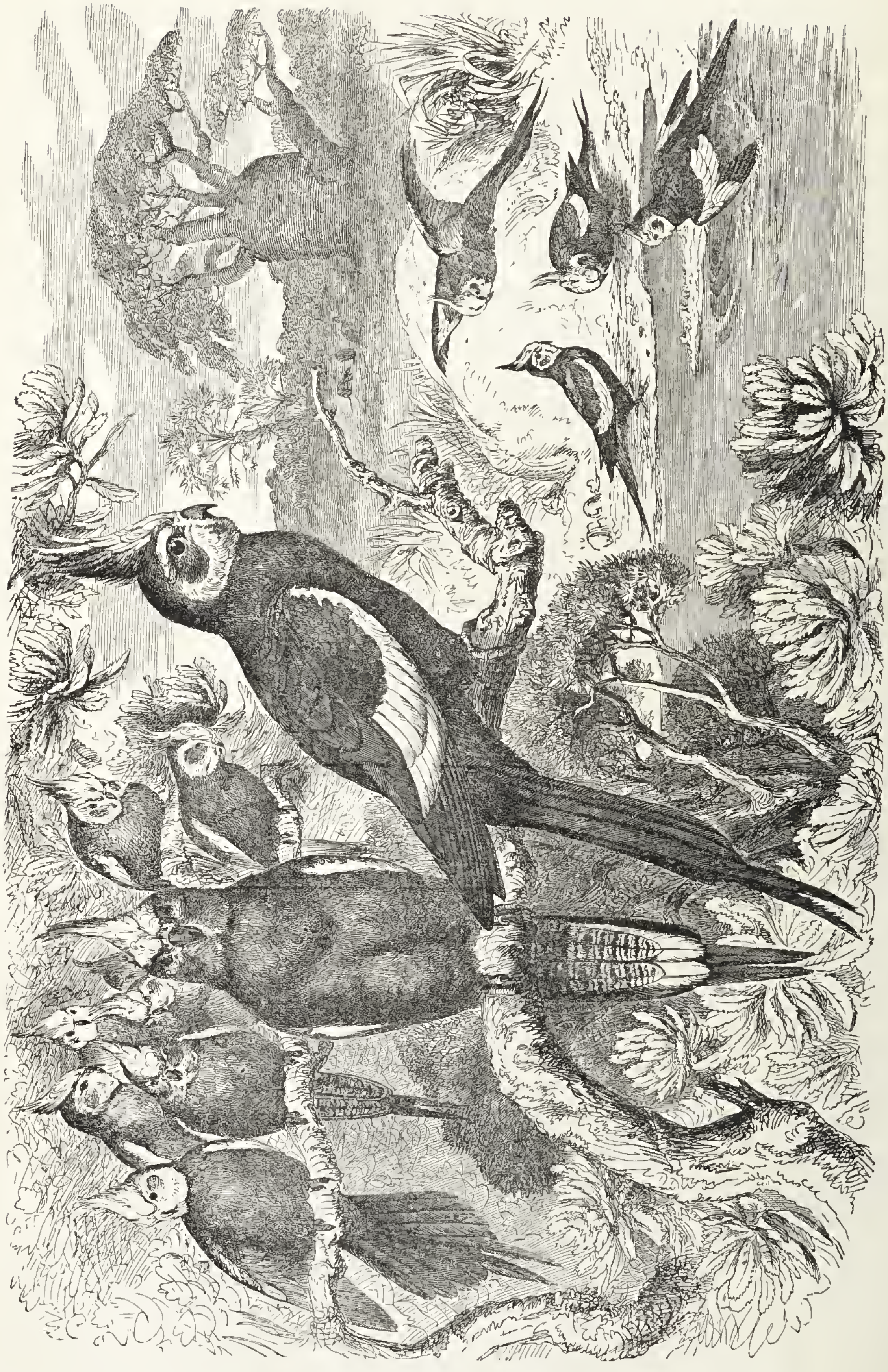
When Gould was investigating the plains in the interior, he saw the Waved Parrots flying about, and remained for some time in the vicinity, in order to observe their habits and mode of life. They came in flocks of from twenty to one hundred to a small lake to drink, and from this locality flew at stated times over the plain in search of the seeds which are their exclusive food; they went to the water in the greatest numbers in the early morning, or as it grew dark in the evening. During the heat of the day they sat motionless under the leaves of the gum-trees, the holes of which were just then occupied by the pairs who were laying, and as long as they remained quiet, were with difficulty perceptible. When going to the stream, they alighted freely in large flocks upon the dead twigs of the Eucalypti, or on the branches that hung down to the water. Their activity is wonderful, and their flight very rapid, resembling that of the falcon or swallow; they run upon the ground with facility, but their feet are ill adapted for climbing among the branches of trees. When on the wing they utter a screaming cry; and whilst perched amuse each other with a caressing kind of twitter, which might almost be termed a song. The Waved Parrot congregates in parties, even during the breeding-time, although pairs are easily distinguished by their faithful devotion to each other. The nest is made in the holes and fissures of gum-trees, and in December contains from four to six eggs of a pure white colour and somewhat round shape. By the end of December the young have flown out and are capable of providing for themselves; they then collect in great flocks, that fly about in company with the old birds. As soon as the breeding-time is over, the flocks begin their migrations, during which they pass regularly from south to north, and only return to their breeding-place when the grass-seeds are ripe. Throughout South Australia they appear in spring, and also in autumn, with the same precision as our migratory birds. Some years ago only solitary Waved Parrots were occasionally seen amongst us; but at the present time every ship brings hundreds to Europe. Before leaving Australia, the captives are put together in wooden cages, the perches of which are placed like little flights of steps above each other, so as to hold a great number of birds in the smallest possible space. Such a travelling bower presents a most amusing appearance; the whole party sits in lines, so that one row of faces appears above the heads of another, and all eyes are fixed upon an observer, as they seem to beg to be freed from their confinement. Quarrels and strife have never been observed among them, and until breeding-time, thousands live most comfortably together, those of the same sex as happily as the little pairs do. We have seen one of the large cages of a bird merchant, that had formed part of a cargo of these birds, and contained more than a thousand pairs, all of which lived in great harmony. The Waved Parrot does not belong to the "inseparables"—that is, to those species that pine and die on the loss of their mates; but it loves the society of its own species, and prefers the company of the opposite sex. Sometimes it will associate with a small parrot of a different species, though it never shows the same attachment that it exhibits to its own. It is, however, necessary to keep these birds in pairs, as under any other circumstances they are never seen to full advantage. They require little change in their food, and can live upon millet or canary seed; they will also eat the juicy leaves of plants, cabbage, and other vegetables; but despise fruit, sugar, and dainties. In spite of their preference for dry food, they drink very little, sometimes not for weeks together, but their owner must not, on that account, neglect to give them fresh water.

Most parrots, however gentle their disposition, become quite insupportable by reason of their noise. This is, however, by no means the case with the Waved Parrots; they can produce a great variety of sounds, but never use their voice in such a degree as to become tiresome, or except to express pleasure. It is not too much to say that the male of this species should be reckoned among the singing birds, for its notes are something more than a twitter, and often become a very expressive though modest song; it may, indeed, be taught to imitate the notes of other good singers in such a manner as to deceive an expert ear. In order to rear these birds, they should be placed in a small room, which can be aired and warmed without disturbing the occupants; the floor should be strewed with sand, and the walls hung with boxes. It is advisable, but not necessary, to ornament the chamber with living and harmless plants, for these offer the best places for rest and concealment; evergreens are particularly suitable for this purpose. Holes should be made in hollow blocks of willow-trees, and divided into compartments by boards, so that many pairs may make their nests in the same block. A room of this description is by far the best for breeding purposes, but in most cases a moderately-sized cage is quite sufficient. The most important thing is to leave the birds undisturbed, and keep them well fed.

It is necessary to be personally acquainted with these lovable little creatures, and to have observed them during the performance of their parental duties, to be able to understand the enthusiasm with which they are regarded; it is only during their pairing time that we become fully conscious of their many merits. "The male," says Devon, "is a model husband, and his mate is a model mother. He devotes his whole attention to his chosen one, never heeding another female, though she be in the same place with him; he is always zealous, devoted, and ardent—indeed, shows the utmost affection towards his partner. Perched upon a twig before the opening of the nest, he sings her his best song, and while she is sitting feeds her with as much zeal as pleasure. He is neither dull, quiet, nor sleepy, like many other husbands, but always cheerful and charming."

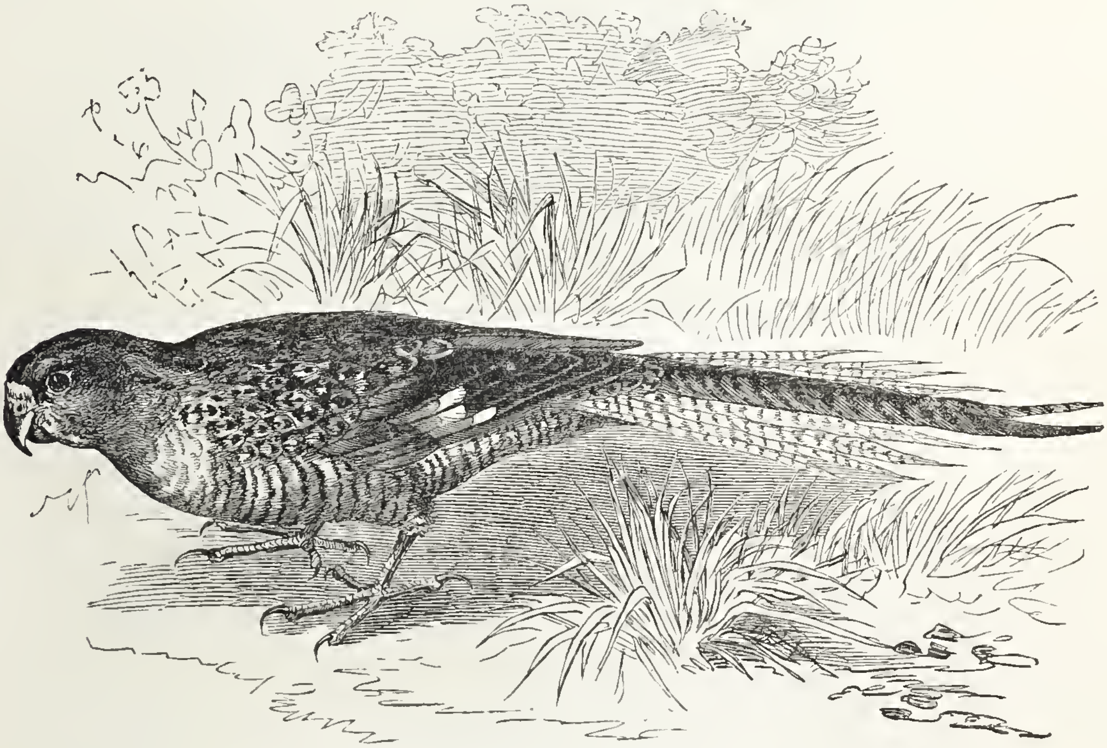
The building of the nest is the exclusive business of the female. She works with her beak at the entrance till it satisfies her, and then, more or less, at the interior, gnawing off little shreds, on which she lays, in the space of two days, from four to eight small, round, shining white eggs. She then sits for eighteen or twenty days most assiduously, and during the whole time is fed by the male, never leaving the hole except on the most urgent necessity. The young remain some thirty or thirty-five days in the nest, and only quit it when fledged. During all this time the mother is busily occupied in keeping their home clean, and, like a good housewife, clears out her little chamber every morning, and cleanses and purifies her offspring with extraordinary care. Immediately after leaving the nest, the young go in search of food, and a few days after conduct themselves quite like the old birds. Still, care must be taken, for the before-mentioned zeal of the father is often shown in an unexpected manner; he will fall upon his brood so boisterously, and seize them with so much roughness, that he kills them by his caresses. The first brood is no sooner fledged than the parents have a second, and even a third and fourth; indeed, Schlegel, the director of the Zoological Gardens at Breslau, declares that he has known them breed all the year round. Such cases are exceptional; three broods, according to our own observations, are the usual number. The last family of young may be left with the parents without danger, and then the first brood may be brought back. These show themselves to be quite as affectionate as their parents, and feed and take care of the nestlings. Moreover, they will imitate each other in everything—in climbing, flying, eating, and chattering—so that the noise in the nursery often becomes quite deafening, and sometimes seems to be too much even for the parents, who will then remove to a distance to get out of the way.

A pair of Waved Parrots in our possession occupied a large cage, in which they seemed very comfortable, but perhaps the bright sun, as it laughed at them through the windows, made them sigh for freedom. One day the female cleverly made her escape, and, before we discovered it, had flown through the window. We now learned to admire this bird from another point of view, as we watched its glorious flight, and may say with truth that we forgot to feel angry at our loss. The fugitive rose high into the air, and screamed with delight as it wheeled round and round with incomparable rapidity over a neighbouring garden; it flew quite differently to any parrot we ever saw—indeed, more like a falcon or a swallow, and was soon out of sight, but in a few minutes reappeared in the garden, apparently in consequence of the anxious cry of its mate, for we had at once placed the latter near the window. The lovers of these birds know that their tone is deceptively like that of our sparrows. It was the height of summer, and all the roofs were covered with young sparrows, who exhibited the greatest agitation as soon as the beautiful stranger appeared. The parrot had placed itself upon a plum-tree near the window, and from thence conversed with its mate. The young sparrows, who thought that the enticing chirp was intended for them, ventured near in flocks, regardless of the warnings and cautions of their elders, for though the latter seemed



THE CORELLA (*Nymphicus Novæ Hollandiæ*).

astonished, they were far too old birds to be deceived, and would not approach; the young ones, on the contrary, surrounded it in crowds. It took not the slightest notice of them, but they were not to be repulsed; they became most pressing in their attentions, hopped quite close to it, looked at it with the greatest delight, and answered its chirp with all their little strength. When it became angry and flew off to another tree, the whole array followed, and it was only when the stranger began to exhibit its splendid powers of flight, that the sparrows were compelled to remain below abashed. This comedy lasted for about half an hour, and the whole length and breadth of the garden was filled with sparrows, when at last, love for its mate made the fugitive return to its room; on this it was seized and put into the cage, where it was most tenderly received by its companion, and the crowd outside dispersed. In this country the Waved Parrots can be kept for whole weeks out of doors. In the spring of 1861, two pairs of these birds flew from a cage to the estate of a noted collector in Belgium; they betook themselves to the tops of some high trees in a large park, and were lost during some time. While they remained at large, as it afterwards proved, they had made their nest, and reared a number of young ones. The owner of the property surprised a whole flock of from ten to twelve in a field of oats, where they were helping themselves; from that time they were enticed with proper food, and before the winter ten birds were captured. Unfortunately, it was impossible to observe those that were still at liberty, as it would have been most interesting to learn if the strangers could survive one of our winters.



THE GROUND PARRAKEET (*Pezoporinus formosus*).

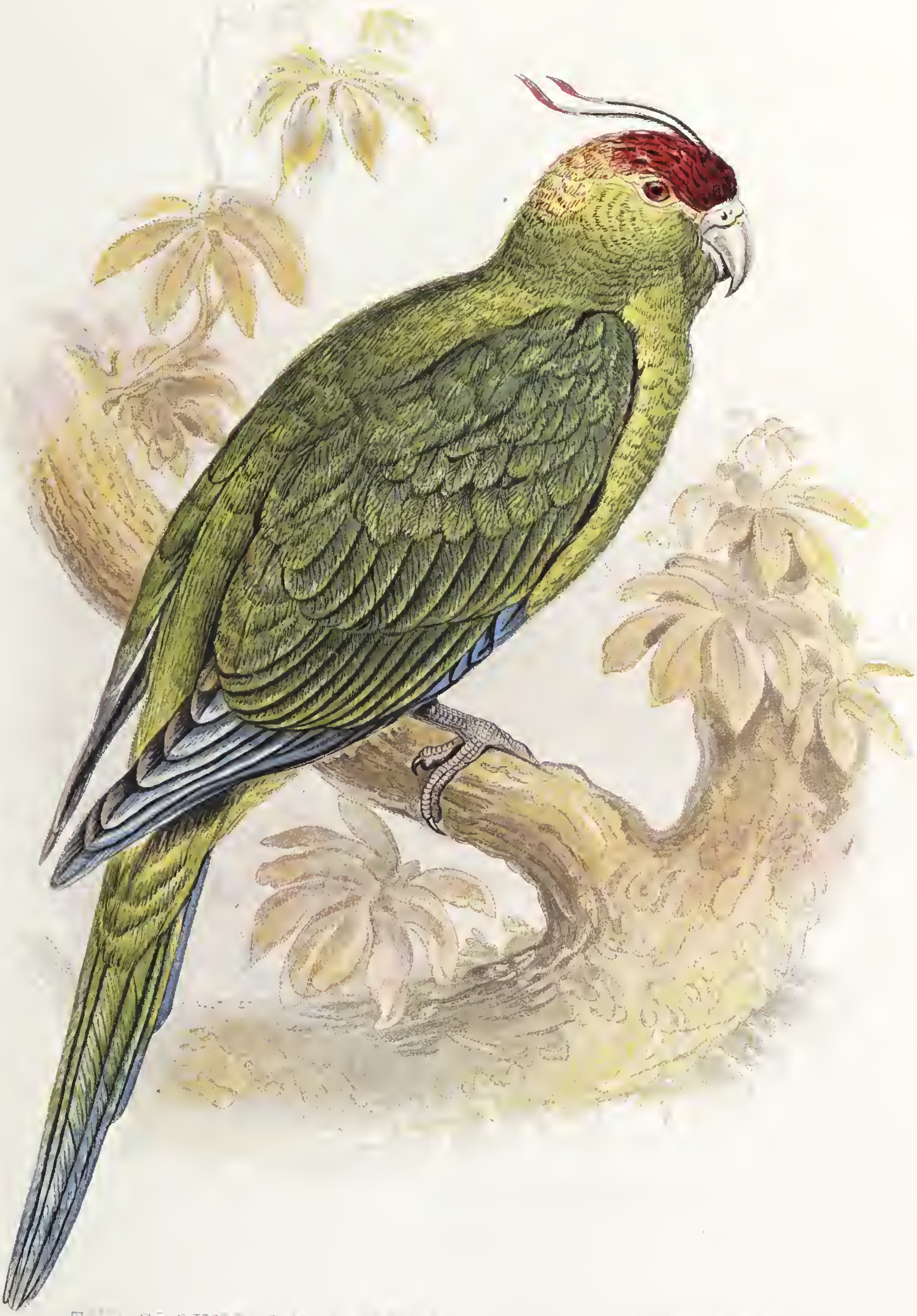
THE CORELLA.

The CORELLA (*Nymphicus Novæ Hollandicæ*) is closely allied to the Cockatoos, although belonging to the group of True Parrots. These birds are fully a foot long, and nearly the same in their spread of wing. The plumage is very variegated in its markings; the fore part of the head, the tuft, and cheeks, are lemon colour; the ear-coverings bright orange; the back of the neck, the two middle tail-feathers, and the outer border of the wings, brownish grey; the back, shoulders, under side, and outer tail-feathers, greyish chocolate brown. The shoulders and sides are the darkest; the upper wing-covers are white; the eyes dark brown; the beak lead colour; the feet blueish grey. The female resembles the male, except that the face and the crest are dark olive green; the feathers near the throat are brownish grey, those of the under parts of the body and upper tail-cover yellow; the four middle feathers of the tail are grey, the rest yellow, and, with the exception of the outer web, edged delicately with brown. Gould, whom we have to thank for a full description of the Corella, found this beautiful bird in great numbers in the interior of Australia. On the coast it is rare in comparison with the thousands seen on the plains of the interior, and in eastern Australia it seems to be more numerous than in the western parts of that continent.

In summer the Corellas build their nests near the Hunter and Peel rivers, and other streams running north, if they can find suitable trees. After the breeding season they assemble in innumerable flocks, which cover whole tracts of country, or alight in hundreds upon the overhanging branches of the gum-trees. In September these flocks begin to migrate to their breeding-place, and in February or March return to the north. They devour grass seed, like the rest of their congeners, but cannot live without water, and, therefore, must remain in the neighbourhood of a stream. They are very active, run with facility on the ground, and fly slowly but often to a considerable distance before they alight. They are but little afraid of man, and if startled from the ground, wend their way to the nearest tree, perch upon a branch, and, as soon as the danger is over, return to the ground; not being shy, they are easily captured. They lay five or six white eggs, about an inch long. Corellas have only lately been brought to Europe in any considerable number; at the present day they are to be met with in all large zoological gardens, and may be obtained from the principal dealers in birds. They require but little tending, and need no particular surroundings for breeding; but they should be left as much as possible to themselves. Two birds in the Hamburgh Zoological Gardens sat by turns on their eggs, the female from the noon of one day to the forenoon of the next, and the male in the intermediate hours. As far as we know, such a division of parental duties has not been observed in any other parrots.

THE GROUND PARRAKEET.

The Ground Parrakeet (*Pezoporinus formosus*) reminds us in many particulars of the Owl-Parrot, or Kakapo; its plumage is of similar colour, and its habits resemble those of that bird in many respects. The length of the Ground Parrakeet is about thirteen inches, the stretch of wing somewhat less; the plumage is dark green, striped with a still darker shade of the same colour; that of the upper side is dark grass green, each feather irregularly striped with black and yellow; upon the head and neck there are black lines. The neck and breast are pale yellowish green; the belly and under covers of the wings a beautiful yellowish green, with numerous curved black stripes; the brow is scarlet; the quill-feathers green on the outer web, and on the inner dark brown, spotted with pale yellow. The four middle tail-feathers are green, marked with yellow; the side tail-feathers, on the contrary, yellow, spotted with dark green; the eyes are dark brown, with delicate light blue circles; the feet and tarsi blueish flesh colour. Gould informs us that the Ground Parrakeet is spread over all parts of South Australia, including Van Dieman's Land; in the northern latitudes of that continent it has never been observed. This bird lives almost exclusively on the ground, and is seldom seen among the branches of trees. Barren sandy districts, abounding in low grass and weeds, or moors covered with rushes, constitute its favourite haunts; there it lives a retired life, either alone or in pairs, and is, therefore, almost impossible to find without the assistance of a dog;



THE GROUND PARRAKEET — — PEZOPORINUS

(Life size.)

it can run among the grass with great rapidity and persistency, or lie close to the ground, like a hen or a woodcock, in the hope of being overlooked, and when flushed will rise and fly quickly over the ground, making all kinds of zig-zags in the air, like a snipe, then fall again, and run hurriedly on. The eggs, which are white, are laid on the bare ground, and both parents assist in their incubation. The young assume the plumage of the adult in the spring, and separate from their parents as soon as they are old enough to provide for themselves. The flesh of the Ground Parrakeet is considered very excellent; it is more tender than that of a snipe, and in flavour not unlike that of the quail. The example figured in our coloured illustration (Plate II.) is the *Pezoporinus cornutus*, which differs somewhat from the preceding, especially in having two beautiful horn-like appendages to the head.

THE LORIES.

In India and the neighbouring islands we find some species of Short-tailed Parrots called Lories (*Lorii*), differing so essentially from those we have described, that modern naturalists are inclined to form them into a separate family. Amongst the points in which they are unlike other parrots, we must mention their comparatively long neck, and feeble beak, the slightly bent under-mandible, without notches at the edge, and closely compressed; the by no means fleshy tongue, divided at its tip into a bunch of horny fibres, and the streaming plumage, which is decorated with the most magnificent colours. Our knowledge of these beautiful birds in their native state is very limited; we are, however, told that the fibrous tongue is employed to lap up the sweet juices that exude from the leaves and blossoms of the trees, and that this very peculiar diet is the great hindrance to their being tamed or transported to any considerable distance; still, in spite of this, some species are occasionally brought to Europe, and will live for many years in a cage. They are docile, and may be taught to speak, but are quiet and languid when in confinement.

THE PURPLE-CAPPED LORY.

The Purple-capped Lory, or Lorikeet (*Lorius domicella*), the largest and best known of these birds, is a really magnificent creature, about twelve inches long and twenty inches across the wings. The plumage is of brilliant scarlet, deep purple on the top of the head, the back of the head violet, the upper wing-covers green, the legs sky-blue; over the breast runs a crescent-shaped yellow line; the tail-feathers are scarlet at the root, striped with black towards the top, and dotted with yellow at the tips; the beak is orange-coloured, and the feet dark grey.

The Purple-Capped Lory lives in parties in the woods, which it never quits; its movements are lively, and its flight very rapid. It would seem that these birds do not subsist entirely upon the nectar from plants, as they may be reared without any particular care upon bread soaked in milk, or any kind of parrot food, and will live for years upon this diet.

We learn from the sailors who bring them to Europe that they are frequently offered for sale in India, but die in great numbers when in confinement.

THE DAPPLED LORIKEET.

The Dappled Lorikeet (*Psitteuteles versicolor*) is a small bird of about six and a half inches in length. The plumage is much variegated; the cheek-stripes and top of the head are dark red, with a band round the neck of deep sky blue; the back blueish green, the wings green, the upper tail-covers light yellowish green, all the upper feathers being narrowly striped with yellowish green, and the under-feathers streaked with yellow along the shaft; both sides of the belly and the inner side of the leg are spotted with purple. The primary quills are black, bordered at the edge with dark green, and surrounded by a yellowish line. The beak is scarlet, the foot a light ash grey, the cere and the bare patch around the eye are greenish white, the iris is reddish yellow, with narrow red rings around the pupil.

We are indebted to Gilbert for a short description of the habits of this species, which is found on the northern side of Australia, more particularly near Port Essington. These birds assemble, he tells us, in innumerable hosts, and settle upon the gum-trees in order to obtain nectar from their flowers: whilst a flock is in motion, their movements are so regular and simultaneous that they might be mistaken for a passing cloud, did not their piercing cries undeceive the spectator.

THE PURPLE-CAPPED LORY, OR LORIKEET (*Lorius domicella*).

SWAINSON'S LORIKEET.

A Lorikeet nearly related to the preceding, called after Swainson (*Psitteuteles Swainsonii*), has been described by Gould as follows:—"The South Australian woods of gum-trees, extending to Moreton's Bay and Van Dieman's Land, shelter large flocks of Swainson's Lorikeets, the flowers of these forests furnishing them with a plentiful supply of nectar and pollen; such trees as have newly blossomed being preferred to any others by these dainty little creatures. The appearance of a forest of Eucalypti covered with blossoms, upon which various species of Parrots and Honey-birds are feeding, baffles all description; three or four different kinds may often be seen busily combining to rob the same branch; nor is it easier to imagine the thousands of tones and cries uttered by a flock when rising into the air, preparatory to leaving one tree for another." These swarms must be seen and heard if we would form any adequate idea of them. During a morning's walk in the woods, near the Hunter river, Gould came upon an enormous gum-tree, about 200 feet high, in full bloom, upon which hundreds were perched in the utmost harmony; he killed specimens of all the four species of Lorikeet found in that part of the country upon one bough.

The flight of these Lorikeets is very powerful, and as straight as that of an arrow: they rise with surprising rapidity, dart through the air uttering noisy cries, and climb the trees with much adroitness, more in the manner of a Titmouse than of a Parrot. After sunrise they are so busily occupied in imbibing the nectar from the flowers, that they can scarcely be frightened from their perch, and Gould found that the firing of a gun had no other result than a loud scream, or merely caused some of the birds to quit the branch that had been aimed at, and settle on another. So successful are they in their search for nectar, that it often streams from the mouths of those that have been shot if they are held up by the feet.

THE DAPPLED LORIKEET (*Psitteuteles versicolor*).

Little has been learnt by travellers of the incubation of this species, but it would seem that the flocks do not divide in the breeding season; as many couples build upon one tree as can find room upon it. The nest is made in the holes of trees during the month of October, and contains from two to four white round eggs. In certain parts of Australia the Lorikeets are great favourites with the natives, who string their heads into chains, with which they deck themselves as with garlands.

THE MAIDEN LORIKEET.

The Maiden Lorikeet (*Coryphilus Tahitianus*), another member of this group, inhabits the islands of the Pacific Ocean, and principally Tahiti, from which it receives its name. It is a magnificent little bird, about six inches long, with a tail that measures two inches and a half. The feathers upon its head form a sort of coif or cap; the plumage is of uniform blueish purple, with the exception of the throat and upper part of the breast, which are of a dazzling white; the lower part of the wing and tail covers are dusky black. Its habits are similar to those of other Lorikeets.

THE PAPUAN LORY.

The PAPUAN LORY OR RASMALAS (*Pyrrhodes carmosine Papuensis*) is one of the somewhat aberrant forms of this group. In shape it is more elongated than those we have just mentioned, and may be recognised by the two middle feathers of its tail, which are longer than the body, and make the entire length of the bird seventeen inches, of which no less than eleven inches must be allowed to these middle tail-feathers: it measures about fourteen inches across the wings. The plumage of the Rasmalas is bright and beautifully tinted, its general colour scarlet, interspersed with blue, golden, and grass-green spots; the head, neck, and top of the back, and the whole of the under portion of the body, are scarlet, except two streaks of splendid sky-blue, edged with scarlet, which run over the hinder and middle parts of the head; the sides of the breast and legs are spotted with yellow, the under tail-covers and the inner side of the legs are deep blue, the wings green, and the centre tail-feathers light grass green tipped with gold, these last colours being repeated upon the other tail-feathers, only that the latter are of a somewhat darker shade at their roots.

The Rasmalas is an inhabitant of New Guinea, and an article of traffic to the natives, who treat the dried skins as they do those of the Birds of Paradise, cutting away both the legs, before exporting them to Europe. As far as we know, this species has never been brought alive to our part of the world, and we are quite ignorant as to its habits and mode of life.

THE BLUE-STRIPED LORY.

The BLUE-STRIPED LORY (*Lorius cyanostriatus*), which we have selected as the subject of one of our coloured illustrations (Plate III.), may be regarded as the type of the beautiful race to which it belongs. Its small size, and comparatively feeble beak, the elevation of the tarsi, and the diminutive claws, are eminently characteristic, as also is the somewhat wedge-shaped tail. The prevailing colour of this species, like that of the Lories generally, is a brilliant crimson, which pervades the entire plumage, but is much relieved and set off by dark shadings of deep red, almost approaching blackness, which cover the hinder part of the back, overspread the extremities of the wings and tail, and vary the tints of the wing-covers, producing a very rich appearance, which is still further heightened by a row of feathers of ultramarine, wherewith the hinder part of the neck is ornamented as with a sort of cape. The eyes are surrounded by elongated patches of naked flesh-coloured skin, immediately behind which the ear-feathers, of a brilliant ultramarine blue, are rendered very conspicuous.

PASSERINE BIRDS (*Passeres*).

THE Passerine order we understand to include the FINCHES and their nearest relations, as also the Sparrows, and other families of similar structure. These birds have been usually grouped together under the name of CONIROSTRES, but as the adoption of this term would oblige us to include the RAVENS (*Coracirostres*), we shall avoid it, considering that the many peculiarities of the latter entitle them to be regarded as forming an order by themselves.

The Passeres, according to our definition, are rather small birds, the largest among them not exceeding the size of a Starling. Their shape is compact, the body strong, the neck short, the head thick, and the wings of moderate length, with nine or ten quills upon the primary, and the same number upon the secondary region of the wing. The tail is generally long, and contains twelve feathers; the foot small, and what is termed a *perching* foot, three of the toes being in front and one behind. The beak is thick and usually conical, occasionally hooked, and still more rarely crossed. The plumage is generally thick, and the feathers comparatively large and soft; their colouring is usually quiet; but this is by no means invariably the case; all are, however, devoid of metallic lustre, or possess it in a very trifling degree. There is a difference observable between the male and female, not always dependent on the plumage, the male being the finer bird; the young resemble the mother. Many species moult twice in the year, so that at certain times their plumage exhibits a more brilliant appearance than at others, owing to the rubbing off of the outer edge of the feathers. The internal structure of the body presents nothing unusual. Although the Passerine Birds are unquestionably far below the parrots in capacity, they are intelligent, acute, susceptible of being taught, and keen of perception.

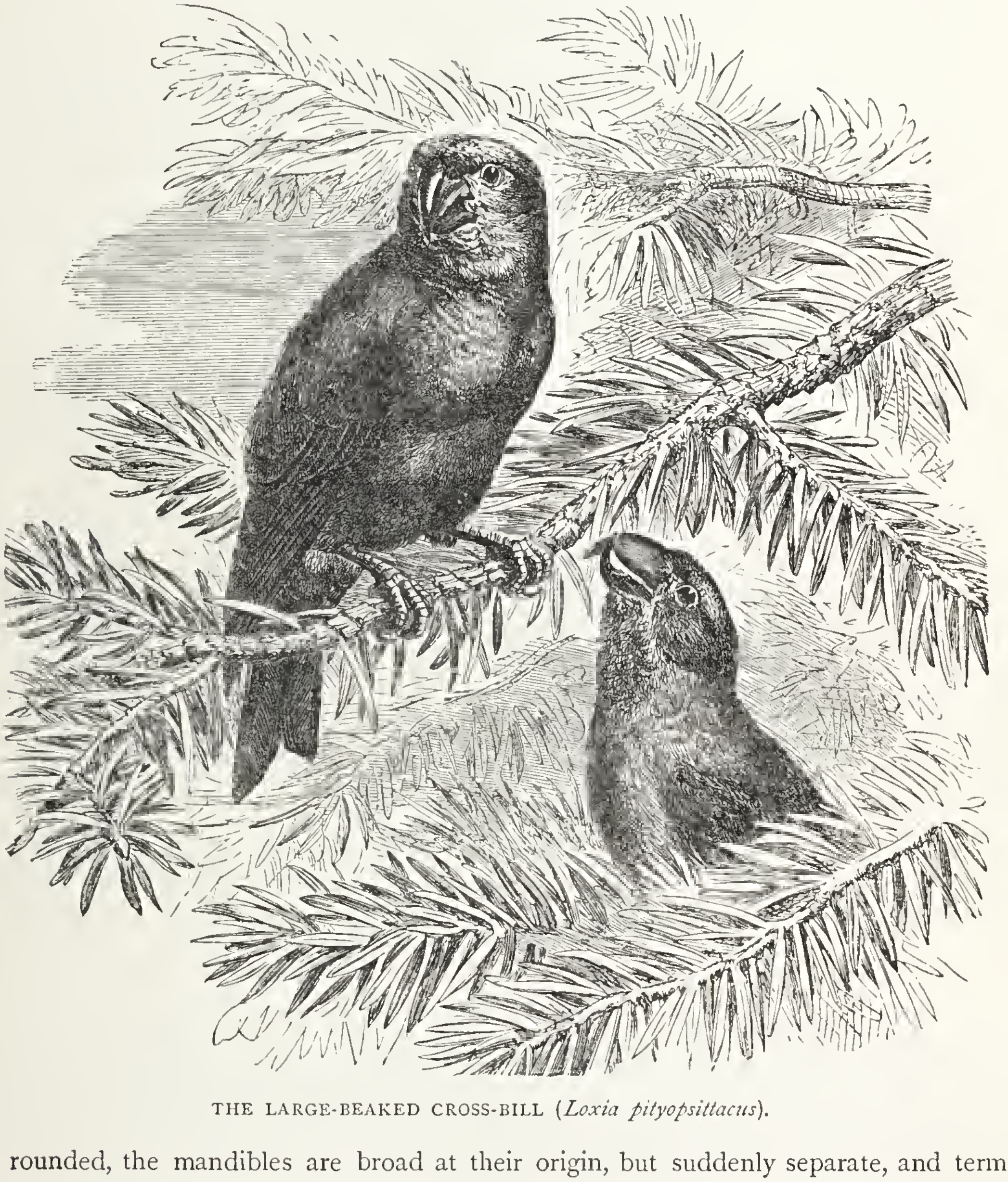
Their flight is not so rapid as that of the smaller parrots, and consists of a succession of undulating movements, which change into a hovering motion when the birds are excited or about to alight. They can walk upon the ground, but generally hop; and though the latter mode of progression gives an air of awkwardness to some species, it contrasts favourably with the waddling gait of the parrots. Many species are able to hop nimbly among the twigs and branches of trees, but few can climb, and still fewer possess the peculiar clinging powers of the woodpecker and other really climbing birds. They prefer the neighbourhood of water, but none of them are capable of swimming or diving.

The Passerine Birds are citizens of the world; they can endure the climate of icy mountains and northern snows, and are met with in the glowing regions of the tropics. Hills and valleys, woods or fields, the reed-covered swamps or treeless plains, are equally tenanted by various races, as is the crowded city or the barren desert. In all these localities they will build their nests and educate their young. Turn where we will, we see them—indeed, they are as much a part of the landscape as the earth and sky. Notwithstanding the fondness they exhibit for wooded countries, we can by no means venture to call them *tree*-birds, as many species live exclusively upon the ground, and all frequent it more constantly than even the parrots. Open country near a wood is their favourite resort, and from thence they visit the surrounding gardens and brushwood. They are found but in small numbers either in deep forests, or on barren plains and mountains. Seeds, fruits, birds, and insects form their usual nourishment, and but few appear to be dainty in their selection. The Passeres are, almost without exception, of a social disposition, and solitary birds are seldom seen; they live in pairs during the breeding season, and keep together in parties throughout the remainder of the year, these parties occasionally increasing until they become large flocks. It is usual to find several different species living together in this manner, and associating for many months; the cleverest become the leaders of the rest, and are obeyed, perhaps we should say imitated, by their little followers. Such are the flocks that settle on our fields in autumn, after they have reared their young and moulted their feathers. In the winter they generally establish themselves in our farmyards and streets. Many species leave their homes annually, and go southwards at the commencement of the winter; others only wander or take occasional journeys, whilst some are stationary. Our part of the world yearly receives a large number of guests from colder latitudes, in exchange for the native birds that have left us to winter farther south. During very severe weather, we are often visited by species from the far north, that perhaps have not been amongst us for years, driven from their home by a deficiency of the food that they generally find in their own country. Some amongst them seem to pay so little regard to the change of season that they will breed at any time of the year, and will carry on the work of incubation exposed to the icy cold of a northern winter, or the exhausting heat of the tropics. For the most part, however, they recognise the arrival of spring, and, like the poets, are inspired with their tenderest feelings during the month of May. At that season the large flocks have dispersed, and each pair is intent upon the duties inseparable from incubation to a degree that is seldom equalled by other birds. Their beaks are then as frequently employed in doing battle with jealous rivals, as in pouring out their songs of joy; their days are divided between singing and fighting; they eat with haste, exhibiting the greatest excitement in all they do. Each pair seeks a separate spot for its own nest, driving away all other birds, so that breeding settlements, such as we have elsewhere described, are rarely seen amongst them. The nests of the Passeres are of different forms, and exhibit very various degrees of skill in their construction. Sometimes they may be seen hanging from, or placed upon, waving twigs or thick branches; sometimes they are hidden among the foliage, or in holes of trees or fissures of rocks, and they may often be found concealed under bushes, among reeds, corn, grass, and even upon the ground. Their exterior is carefully formed of twigs, grass, hay, lichens, moss, plant-cotton, and such like materials, and is lined with softer fibres, moss, scraps of wool, hair, and feathers. The brood commonly consists of from three to eight eggs of various shape and colour, usually light blue or green, or yellowish grey, with markings of various kinds. In most cases only the female sits upon the eggs, and during the period of incubation she is fed by her mate, but sometimes the two sexes share this duty and sit in turn, appearing to rival each other in taking care of their little family. The young early attain their full growth, and seldom need the attention of the parents after they have left the nest, as they soon learn to seek their own food and associate together in flocks, flying about over a limited extent of country until the season for moulting arrives. The parents meanwhile rear another brood, sitting sometimes thrice in the year, whilst others breed but once in the twelve months. Many enemies pursue these small and feeble creatures—indeed, some falcons feed entirely upon them; those and their nightly pursuers, the owls, must be considered as their most formidable foes, though monkeys, lemurs, cats, weasels, bears, and shrew-mice, the tree-frequenting rodents, and some kinds of snakes, are dangerous enemies; indeed, man himself cannot always be numbered among their friends. On the whole, the damage done by Passerine birds is not very serious, and some of them are inexpressibly useful by reason of the enormous quantities of insects and seeds of noxious plants which they devour; still, there is no denying that many species become very troublesome, especially when they congregate in large flocks, and descend upon ripe corn or fruit-trees, and we readily acknowledge that it cannot be agreeable to have to entertain hundreds of thousands of these little destroyers for weeks together.

Amongst the very numerous Passerine races, we find some that might be called the PARROT-

FINCHES, for the same reason that we call the little "Love Birds" SPARROW PARROTS; indeed, the resemblance they bear to the parrots is very striking, as is seen not only in the contour of their body, but in its structure, as well as in their demeanour and peculiar habits. Such, for example, are—

The CROSS-BILLS (*Loxiæ*), which, although but few species are known, may be said to form a separate family. They not only differ from other Passeres, but from all other birds, in the formation of their beak. This very remarkable instrument is thick and strongly arched, its ridge or culmen is high and rounded, the mandibles are broad at their origin, but suddenly separate, and terminate in sharp points that are bent across each other, the under-jaw being inclined sometimes to the right side, sometimes to the left, without any general rule being observable in this respect; there are, indeed, as many that have their beaks twisted to the right as in the opposite direction. It is, moreover, specially noticeable that the muscles moving the lower jaw are unequally developed on the two sides of the head, an arrangement which must be considered as a necessary consequence of the sidelong movements of the jaw. The head is large in comparison with that of other finches, the body short, but slender and high; the keel of the breast-bone is long and arched, resembling that of the


THE LARGE-BEAKED CROSS-BILL (*Loxia pityopsittacus*).

woodpeckers. The plumage is thick and soft, the wings of middle length, narrow, and pointed; the tail-feathers strong, narrow, and short, those at the side being considerably longer than those in the middle. The tarsi and bones of the leg are bowed inwards, and are short and strong; the toes long, with stout, curved, pointed claws. The eyes are small and prominent; the nostrils round, placed close to the forehead, and almost or entirely covered with hair-like feathers. The internal construction of the body does not differ from that of other birds of this order.

Like most other species belonging to the Passeres, the Cross-bills live in society, seldom leaving the woods, wherein they find fir-trees adapted to their support. They cannot be said to have any fixed residence, but are the gipsies of the feathered race; their home is anywhere and nowhere. It is by no means easy to discriminate between the different species of these birds, seeing that every extensive collection shows us many varieties, strongly resembling each other. We may, however, safely mention four different species belonging to Europe, and in the mountainous districts of Asia and America we also find about that number; all these, however, present not only the same general structure, but a similar colouring of the feathers. The plumage of the old male bird is of a beautiful vermilion or red-currant tint, while that of the young male is of either a reddish yellow, gold, greenish gold, or red chalk colour. The coat of the female is green, shaded into yellow or grey. The plumage of the birds before moulting is a light grey, streaked with a darker shade; the wings and tail-feathers are of a greyish black. The large head and strong beak, bulky feet, and short tail, make them appear very stout and clumsy, nevertheless they are really agile and rapid, flying quickly and lightly, hovering before they perch, climbing nimbly about among the branches, and are only awkward and out of place upon the ground.

THE LARGE-BEAKED CROSS-BILL.

The LARGE-BEAKED CROSS-BILL (*Loxia pityopsittacus*), the largest of all the Cross-bills with which we are acquainted, is from seven to seven and a half inches in length, and eleven and a half to twelve inches across the wings. The beak strongly resembles that of a parrot, and is very thick and high, bent into a crescent, each mandible terminating in a short hook. The prevailing colour in the plumage of the old male is either a dark or light vermilion; the wing and tail covers greyish black, edged with greyish red; the belly greyish white. The young male is recognised by its light-reddish tints, which upon the back are mingled with greenish yellow, and upon the rump with yellow. The female is dark grey on the upper part of the body, and the feathers have a more or less clearly defined edge of green or yellowish green. The under part of the body is light grey, the feathers being edged with greenish yellow; the wing and tail feathers are greyish black, dotted with greenish grey.

THE PINE-TREE CROSS-BILL.

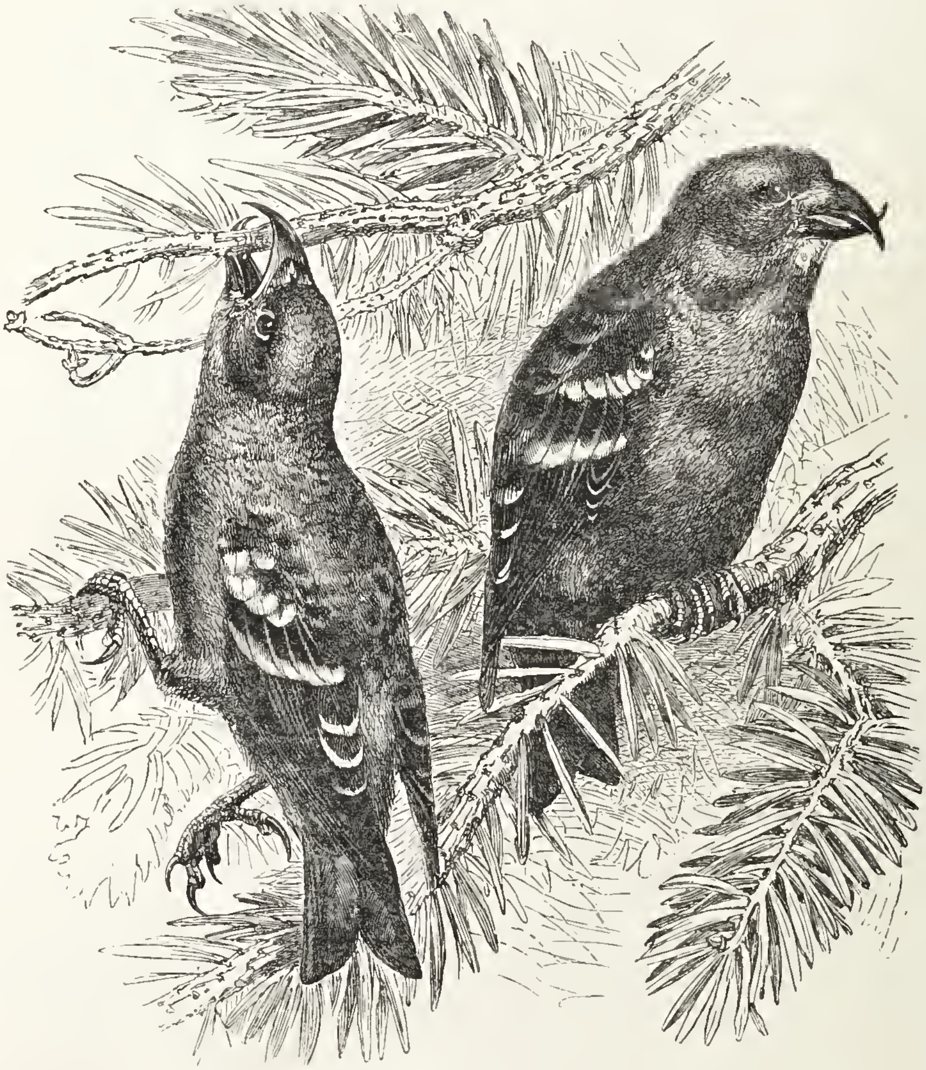
The PINE-TREE CROSS-BILL (*Loxia curvirostra*), or FIR-PARROT, is a somewhat weaker and more slender bird than the preceding. Its length is from six to six and a half inches; its width across the wings ten and a half to eleven and a half inches. This species is distinguished from the foregoing by its longer and more delicate beak; the plumage of both birds being similarly coloured.

THE BANDED CROSS-BILL.

Next to these we must mention the BANDED CROSS-BILL (*Loxia tænioptera*), a much rarer species, smaller than the Pine-tree Cross-bill, and having a still more delicate beak. It is distinguished by two white lines upon the wings. We think it very probable that many other Cross-bills usually mentioned as varieties ought really to be considered as constituting distinct species.

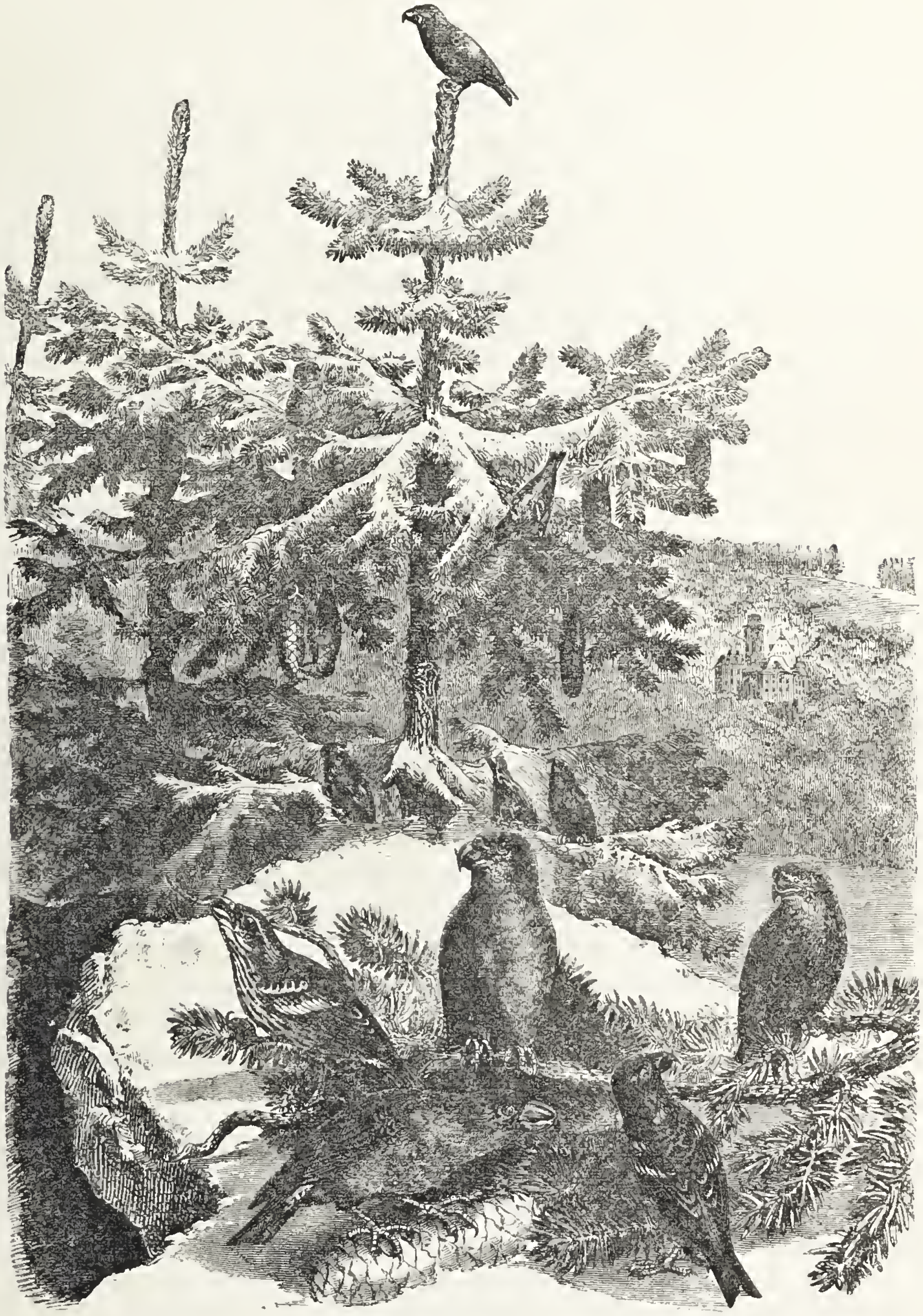
The American and some of the Indian Cross-bills differ considerably from such as are found with us. Those in America are remarkable for the smallness of their size, and may be considered as the dwarfs of the family. The Cross-bills always inhabit pine-forests, as their food consists entirely of the seeds of the pine, fir, and larch; they are consequently more numerous in the north than in the south, seeing that in northern latitudes these trees are met with over a far wider extent of country than elsewhere. They are seen almost annually in Germany, but only when the seeds of the above-mentioned trees are ripe. When the cones are abundant they visit in great numbers many places where they have not been for years, appearing at irregular intervals, and not confining themselves to any particular localities. Should the situation be suitable, they will proceed at once to breed, otherwise they merely tarry for a short time, and then pass on to a more desirable resting-place. The most favourable spots in the woods are soon taken possession of to serve as their head-quarters, from whence they fly over the surrounding country, returning to settle upon the same trees in the evening. They are very social, living in pairs in the breeding season, but even during that period will sometimes associate in considerable numbers. Their nests are made among the branches of fir-trees, and there they disport themselves gaily, climbing nimbly, and assisting their movements, as parrots do, with their beaks. They will hang for minutes together head downwards, clinging to a twig or cone, seeming to enjoy this apparently uncomfortable position. Their movements, when on the wing, are undulating and rapid, but they never fly to any great distance. The pleasure they experience in the society of their mate is often testified by fluttering over the tops of the trees as they sing, after which they hover for a time, and then sink slowly to their perch. In the daytime they are generally in motion, with the exception of a short time at noon. During the spring, summer, and autumn, they pass their time in flying from one plantation or mountain to another. In winter, if the cold is extreme, they remain much longer in their sleeping-place, only coming abroad after the sun has warmed the earth, though they commence their song early in the morning. At this season they make their first appearance about ten o'clock, and are soon busily employed in search of food; about two o'clock they become quieter, seek food again at four o'clock, and then go to roost. The Cross-bill troubles itself but little about the other inhabitants of the woods, and is almost fearless of man, whom it is very evident it has not learnt to regard as an enemy. Should a female be shot, its mate will remain sorrowfully perched upon the branch from which his little companion has fallen; or again and again visit the spot where she was killed in the hope of finding her; indeed, it is only after repeated proofs of the treachery of mankind that he begins to testify any symptom of shyness. When placed in a cage, the Cross-bills become exceedingly tame, appearing entirely to forget the loss of their freedom, and grow so fond of those they are with as to obey them in everything, allowing themselves to be touched, or even carried about the room on the hand, and demonstrating their confidence in a variety of ways, so that the inhabitants of mountainous districts are usually much attached to these gentle little creatures.

The call-note of the Pine-tree Cross-bill, common to both sexes, is "Gop, gop," "Gip, gip," "Yock, yock." This is uttered either whilst flying or when at rest; and so gentle is its sound, that the listener must be quite close to the tree in order to hear it; indeed, he might imagine the bird to be at a considerable distance, till, on glancing upwards, he beholds it perched just above his head. The cry of the Fir Cross-bill is shriller and weaker than that of the Large-beak. Those who have heard both species can scarcely mistake them. No sooner does one of them utter the sound of "Gip, gip," than all the rest become attentive, and generally fly away together, if the first bird sets the example; and if, whilst they are eating, other birds pass by, their cry of "Gip, gip," is intended as an invitation to join the party and partake of the meal. Should one be at a distance from the rest, the almost incessant cry of "Gop" will bring it back; it is also the signal for the whole flock to settle. This last note is never uttered during flight. Whilst brooding, the Cross-bill employs a gentle sound, not unlike the piping of a little chicken whilst under the wing of the hen, and the young have a similar cry, mingled with the call-note of the parent bird. The song of the male is very pleasing, particularly that of the Pine Cross-bill; it consists of a cadence formed of a variety of weak twittering low notes. These birds are to be heard at their best when the weather is fine and warm, and are quite silent if the day is windy or stormy; whilst singing, they perch on the summit of the trees.



THE BANDED CROSS-BILL (*Loxia tænioptera*).

The female has the same song as her mate, but it is somewhat gentler and more confused. In captivity they sing throughout the year, except during the moulting season. The food of the Cross-bill consists almost exclusively of the seeds of the forest trees, in obtaining which its strong crossed beak is of the greatest service, as it requires considerable strength and much skill to break open the cones of the fir and pine, in order to obtain the hidden seed. The bird perches upon a cone with its head downwards, or lays it upon a branch, and stands upon it, holding it fast with its sharp, strong, pointed claws. Sometimes it will bite off the cone and carry it to a neighbouring bough, or fly with great difficulty some ten or twenty paces to another tree where it can be opened, for a suitable spot is not to be found on every branch. If the cone is large, the little creature tears its way through the



CROSS-BILLS (*Loxiæ*).

middle of the outside with its upper mandible, inserts its half-opened beak, and forces an opening by a sideway motion of the jaws; it is then easy for it to pick out the seeds, which are soon swallowed. The breaking up of the husks produces a cracking sound, that is heard very distinctly from below. The cones are seldom completely emptied of their seeds, but are thrown down to the ground when scarcely touched, or not more than half cleared, so that the grass beneath the trees on which a party of these creatures has been perched is often completely strewn with them. When, however, there are no more to be gathered, the birds will seek and feed upon those they have previously flung away. The Pine Cross-bill seldom touches the far harder cones of other fir-trees, as it does not possess strength sufficient to open them, though the Large-beaked species breaks them without difficulty, and can at one stroke tear off all the husks into the midst of which it has plunged its beak. A cone is thus rifled of its contents in the space of two minutes, when it is immediately thrown down and another taken. Should the Cross-bill not be disturbed, it will remain for hours upon the same tree, and continue for weeks together in one part of the country. As long as fir-cones can be found, it seems not to care for other food; but if driven by hunger it will eat oily seeds such as those of the hemp or thistle, or even insects, seeking for them in the neighbouring gardens and orchards. These birds are cleanly in their habits, preening themselves carefully after every meal, and rubbing their beak for minutes at a time upon the branches, in order to cleanse it. Still, it is not always possible for them to keep their plumage trim, and their feathers are frequently covered with a coating of resin. The feeding of the Cross-bills on the fir-cones has another very remarkable result. Their flesh becomes so penetrated with resin that it will resist putrefaction for a lengthened period. It acquires by exposure a peculiar smell, but cannot be said to decay. We have made many experiments upon this subject, and always with the same result; there is a specimen now lying before us, which was shot during the extreme heat of last summer, and still retains its feathers. We have even seen a mummy of this bird which was twenty years old. That the resin imbibed is the only cause of this peculiarity is proved by the fact that specimens which have lived upon other diet for some time before their deaths, share the ordinary fate of dead birds. The Cross-bills are at all times a great ornament to our woods; but it is only in the winter, when the snow is on the ground, that we appreciate their full beauty. At such times their brilliant red forms may be seen perched on the dark green branches, and as the white, snow-covered ground throws them into strong relief, the fir upon which they rest presents the appearance of a vast Christmas tree. Their appearance is rendered still more attractive by the circumstance that they usually assemble to breed during the winter season; though they will also lay eggs during other months of the year—as readily in the height of summer as when the snow lies thick upon the branches, and all other living inhabitants of the woods are silent. They seem to trouble themselves but little about the change of seasons. At the breeding time the pairs into which the flock separates, choose the finest trees in the woods, whereon they make the cradles for their young, as near together as possible. The male then perches himself upon the highest branch of the most lofty tree, singing energetically, calling to his mate incessantly, and turning himself in all directions, seeming to wish to exhibit himself and his beauty to her in all points of view. If she, however, does not answer his call, he flies to another tree and recommences his song. Should she still linger, he chases her sportively from branch to branch, uttering his piping cry; at such times the Large-beaked Cross-bill accompanies these endeavours to attract the notice of his mate with a peculiar fluttering of his wings, often rising into the air and then settling again in the same place; these demonstrations continue till about noon, when the building of the nest commences. This is made upon some widely-projecting or forked branch, and is always situated so as to be well covered by the twigs that hang over it, partly to guard the little family from any snow that might fall, and partly for the sake of concealment. The nest is most artistically constructed. It is formed externally of pine twigs, and lined with feathers, soft grass, and the needle-like leaves of the fir-tree. The walls are about an inch thick, and strongly woven together, the interior being tolerably deep. All the nests that we see in this country are thus constructed, and therefore it is rather surprising to hear from Eekström, one of the first Swedish naturalists, that in Sweden "the Large-beaked Cross-bill builds a round nest, formed of twigs, interwoven with other materials, and of such a large size that it is at least an ell in diameter; the entrance being perfectly round, and so small that the bird can only pass in and out with difficulty; while the interior is large enough to hold a man's fist. The winter nests," as he tells us, "are built in this manner; those for summer use are smaller, and have thinner walls." We mention this statement, though we are by no means sure that it applies to the species with which we are familiar. We had once an opportunity of observing a female Cross-bill whilst building. She commenced by breaking off dry twigs, and carrying them to the spot she had chosen for the nest, and then flew in search of such scraps as she could find, carrying away a whole beakful at a time, and laying them in their proper place. As soon as the rounding of the exterior nest was accomplished, the bird got inside and spent some time in pushing it with her breast and pulling until it was somewhat in order. She took all the materials from a neighbouring tree, and was so industrious that she continued her work during the afternoon, only requiring from two to three minutes to prepare and carry each load. The brood consists of from three to four rather small eggs, of a greyish or blueish white colour, streaked with faint blood red, reddish brown, or blackish brown spots; sometimes these spots take the form of a wreath round the broad end of the egg, and sometimes cover the whole of its surface.

The careful mother nurses her young with the greatest attention, whilst the male fulfils his task of tending her and supplying all her wants. The nestlings are fed from the first day of their life on the seeds of the fir or pine, softened in the crop of the old birds and half digested, but after a short time they are able to take them without this preparation. They rapidly attain their full size, and are active and lively, but require parental attention for the lengthened period during which their mandibles are not crossed, as until they are so the young are incapable of opening cones for themselves. After leaving the nest, they seek shelter in the thickest trees, in the vicinity of their parents, and while the latter are procuring fir-cones, as above described, will cry uninterruptedly, like naughty children, following the old birds hastily should they leave the tree, or calling long and dismally until their return. After a time they are taught to work, their parents commencing by giving them half opened cones to practise upon, and afterwards such as have only been bitten from the trees. When the young are quite independent in this respect, they form fresh flocks, or associate themselves with that of their parents.

It is easy to ensnare the Cross-bill if it is enticed to the ground by the help of a tame bird. In some parts of Germany high poles are prepared, covered with pine branches, in which limed twigs are concealed; these are then placed in the upper parts of the woods, and a decoy-bird fastened beneath them, which contrives to attract the attention of all that fly over it, so that many perch upon the bushes and limed twigs; in this manner numbers may be caught in the course of a morning.

We must leave it undecided whether a most remarkable species found in the Sandwich Islands be reckoned among the Cross-bills or not. Many naturalists have no hesitation in so placing it, though Reichenbach believes it to be more nearly allied to the Honey-eaters, with whom our readers will shortly be made acquainted, than to the Finches. This bird, which we shall call the PARROT-GREENFINCH (*Psittirostra psittacea*), appears to be even more of a connecting link between the Parrots and the Finches than the Cross-bill or the Parrot-Bullfinch, as its two names clearly express. In size it resembles our bullfinch, its length being about six and three-quarter inches, and the length of the wings three and a half inches. The plumage is of a beautiful parrot-green, intermixed with grey upon the breast. The head and breast are of gamboge yellow, the wings and tail-feathers edged with green, and the back and legs of a black colour. We are entirely ignorant of such particulars of its life and habits as might give us any assistance in decisively assigning this bird to its proper place; it still may be numbered amongst our greatest rarities, as but very few collections can boast of a specimen.

THE BULLFINCHES (*Pyrrhulæ*).

The Bullfinches are known by their short thick beak, arched in all directions, while the upper mandible terminates in a small hook. Their other characteristics are their short moderately strong legs and somewhat soft plumage, the nature and colour of which vary considerably in the different members of the family. These birds are found throughout the whole world, with the exception of Australia; but they principally frequent the temperate and frigid zones. They inhabit woods and bushes, as well as mountains and deserts, and pass as much of their time upon trees as upon the ground. Their food consists principally of corn, seeds of various kinds, and green leaves and buds. Being eminently social, they mingle freely with their congeners, and very soon become attached to man. In their movements they are somewhat clumsy, and much behind the Cross-bills in agility and beauty. Their song is very simple and pleasing, and to this some add the gift of being able to learn and imitate with great accuracy the notes of other birds. The nest is always carefully hidden in trees or the clefts of rocks. The number of eggs is from four to six.

THE PARROT-BULLFINCH.

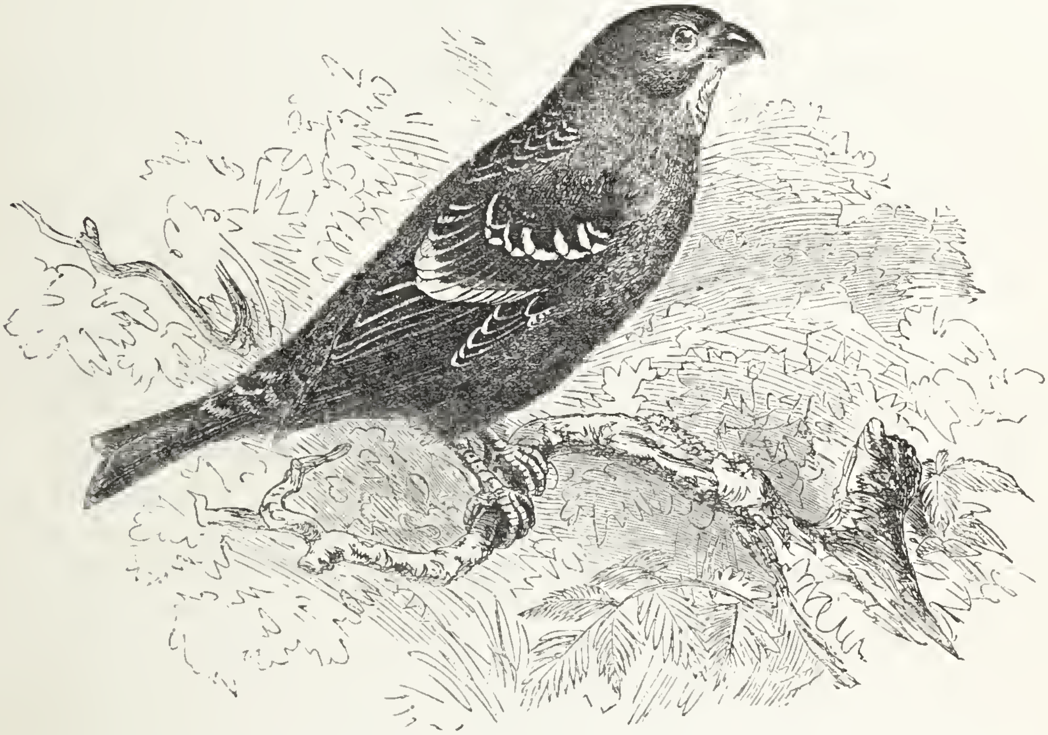
The Parrot-Bullfinch (*Paradoxornis flavirostris*) should, as its name testifies, be assigned the first place in this family. This is a very rare bird, and of striking appearance, inhabiting Southern Asia; it has not the beak of the true Bullfinch, the upper mandible not rising noticeably above the lower one, but curving outwards towards the sides, as in some species of parrots. The wings are somewhat feeble and decidedly rounded, the sixth quill being longer than the rest; the tail is long, graduated, and strong; the legs and feet very powerful, the toes of middle length, and the claws much bent. Its soft and flowing plumage is of a greyish brown, somewhat lighter on the under parts of the body, reddish brown on the back of the head and neck; the mantle olive-coloured, with a band of deep black round the throat and over the ear-covers; the face, skull, cheeks, and throat are white, spotted or striped with a darker colour, and there are tawny tints upon the belly, becoming redder upon the sides. The beak is of a brilliant yellow; the feet leaden coloured, the eye reddish brown. In size this bird resembles our common bullfinch, its length being about eight inches, three of which belong to the tail. The wing measures three inches from the shoulder to the tip.

All the varieties of Parrot-Bullfinch with which we are acquainted are inhabitants of the Himalayas. Jerdon tells us that the species we have just mentioned was seen by him in the Khana Mountains, at a height of about 5,000 feet above the level of the sea; and it has been observed by other travellers in Nepaul and Assam. "I found," he continues, "that they feed upon a variety of seeds, and saw a female with two or three young ones that strongly resembled her in colour; they were somewhat shy, but did not hide themselves, merely flying from tree to tree." Another species was found by the above-mentioned naturalist in the bamboo woods of the hilly districts of Nepaul, Sikkim, and Butan, where they feed upon all kinds of seeds. They flew about in small parties, and appeared to be somewhat timid, allowing themselves to be watched, but seeking shelter when pursued. We learn from Tickell that they readily devour corn, maize, and rice. "After eating," says this writer, "they perch upon the branches of the trees and bushes, and have no appearance of living a retired life, as is the case with the Timalias. In some respects they resemble other bullfinches."

We are happily much better acquainted with the second tribe of the same family, the European species of which is named

THE PINE GROSBEAK.

The Pine Grosbeak (*Pinicola enucleator*) deserves our notice, as being the largest of the Bullfinches. Its beak is vaulted on all sides, and the upper mandible somewhat hooked, in this respect differing from other finches; the margin is slightly curved, and the extreme tip of the under mandible rather blunted. The legs are short and strong, the toes powerful, the claws large, and the wings, when closed, seldom reach beyond the first third of the tail; the latter is graduated to the centre. The Pine Grosbeak resembles the Singing Thrush in size, its length being from eight to nine inches, from three to three and a half of which belong to the tail; the breadth across the wings varies from thirteen to fourteen inches, and the wing measures four and a half inches from the shoulder to the tip. The plumage is rich, and somewhat straggling. In the old male birds, a pretty red shade predominates, whilst those of a year old are somewhat yellower; the throat is of a paler colour, and the wings marked with two crooked lines. The individual feathers are ash-grey, blackish along the shaft, tipped at the end with a red or reddish yellow, and dotted here and there in the middle with a darker shade; the edges, on the contrary, are somewhat lighter, thus producing a cloudy kind of marking. The wing and tail feathers are black, bordered with a light shade, these borders being much more distinct upon the shoulder-feathers. The beak is of a



THE PINE GROSBEAK (*Pinicola enucleator*).

dirty brown, blackish at the tip, the legs greyish brown, and the eyes dark brown. This bird inhabits the northern countries of Europe and Asia, and in America there is a very similar species. As far as we can ascertain, the Pine Grosbeaks live during the summer alone, or in pairs, and only assemble during the winter in flocks, that may be seen flying over the northern woods or frequenting the solitary farms, returning at the commencement of spring to their retreats in the forests. Should a heavy fall of snow occur and compel them to migrate to more southern parts, the flocks will join each other, and that often in very considerable multitudes.

In the years 1790–93–98, and 1803, such enormous swarms of these birds appeared in the islands of the Baltic, that in the country about Riga some thousands of pairs were caught weekly for a considerable time. They were also very numerous in Russia during the winter of 1821, and have been more recently seen in great numbers in various parts of Germany. We have to thank these involuntary wanderers for nearly all the information we possess concerning their habits, for we are but little acquainted with their mode of life in their native wilds. Whilst with us, they fly about in flocks during the day, eat in company, and settle in the evening all together upon the same sleeping-place, their favourite haunts being the pine forests, and they seem to prefer those in which the underwood is composed of young juniper-trees. They do not frequent thick foliage, but fly over barren plains as rapidly as possible.

When these birds first come amongst us they are harmless, confiding creatures, who have not yet experienced the artifices of man, never offering to stir if a stranger or hunter approach the trees on which they are perched, and will stare at the gun destined for their destruction without thinking of flight, even should one of their companions be shot down from the same branch. Persons have tried successfully to catch them by means of snares fastened to the end of poles, by the aid of which they could be thrown over the heads of the birds; indeed, the clumsiest kind of trap is all that is required to catch these unsuspicious little wanderers. The most touching tales are told of the attachment of the Pine Grosbeak to its mate. On one occasion, three out of a party of four had been captured, when, to the astonishment of all, the fourth crept into the net in order to share the fate of its companions. It must not be imagined, however, that these birds are really foolish, for experience soon teaches them its lessons, and they become distrustful, shy, and cautious. In its habits the Pine Grosbeak often reminds us of the Cross-bill; it is essentially a tree-bird, being quite at home upon a branch, but uneasy and out of place upon the ground. It can climb skilfully from one bough to another, hopping with ease to tolerably distant branches. Its flight is rapid, and, like that of most finches, rather undulating, and it hovers before perching. Its voice is flute-like and expressive, resembling that of the bullfinch, and its song, which may be heard throughout the whole of the winter, is very varied and pleasing on account of its soft clear notes. In winter we do not hear it in perfection, as it is then low and disjointed; but in spring, when the male rouses all his energies to cheer his little mate, his tones would satisfy the most fastidious critic; it sings during the clear light summer nights of its native land, and is there called on that account "the Watchman." This bird has many other good qualities, and, owing to its gentle, confiding temperament, may be easily tamed if properly treated. It becomes, in a few days, accustomed to confinement, taking its food readily from the hand, and will allow itself to be stroked, or even carried about the room, all the time testifying its happiness and content. It is an interesting sight to see a male and female bird in one cage, for their tenderness towards each other is extreme; but, alas! in one point they are deficient—they do not survive the loss of their freedom for any considerable length of time, and pine away rapidly, especially when their keepers forget that these children of the north must have fresh cold air, and foolishly confine them in hot rooms. The birds that come to us prove themselves almost entirely insensible to cold, and are lively and cheerful in the most severe winter weather. If shut up in a warm, close chamber, they will climb uneasily around their cage, open their beaks and pant, thereby showing how unbearable and injurious they find the heat of such an unwonted climate. Under favourable circumstances they will live for a year in confinement; but their plumage does not retain its beauty after the first six months, turning yellow and losing its brilliancy. It is best to keep them, even during the winter, in an unwarmed room, or still better in a cage hung outside the house. In its native state the Pine Grosbeak feeds upon the seeds of the fir-trees, which it picks out of the open cones or gleans from the ground. It will also eat many kinds of seeds or berries, and looks upon green weeds and the buds of trees as dainties. Tame birds are fed with linseed, rapeseed, and juniper or mountain-ash berries; they require a considerable quantity of food, as they are large eaters. It would seem that in summer they live extensively upon insects, especially flies, and with these they probably feed their young.

We have but scanty knowledge of their manner of breeding. In one instance that came under our notice, the nest was made in a privet-bush about four feet high. It was very lightly built, and scarcely thicker than that of a hedge-sparrow, the outer wall being formed of dry stalks of plants, and the interior lined with horsehair. The brood consisted of four eggs of a beautiful bright blue, tinted at the broad end with reddish brown, and having a few chestnut-brown spots. In colour and marking they much resemble those of the Cherry Hawfinch. Only the female sits upon the eggs, but during her seclusion she is cheered by the song of her mate.

THE CARMINE GROSBEAK.

The Carmine Grosbeaks (*Erythrothorax*) differ from the preceding principally by reason of the smaller size, and consequently inferior strength of the beak, which is short, thick, somewhat bowed, vaulted, and elevated slightly at the ridge, with a scarcely perceptible hook at the tip. The feet are of moderate length and strong, the tail is tolerably strong and excised, the wings somewhat long in proportion to the body, the third and fourth quills being the longest. The magnificent crimson which forms the principal feature in the plumage of the adult male, distinguishes it from the female and from the young birds, whose colour is a greyish brown, or brownish grey; the males may be numbered among the most beautiful birds of the Passerine order.

THE ROSE BULLFINCH.

The Rose Bullfinch, or Rose Finch (*Erythrothorax roseus*) is seven inches long and ten and a half broad. Its forehead is of a dazzling whiteness, and the rest of a brilliant carmine red; the wings are of the same colour, with two lighter stripes running over them; the under part of the body is also of a bright red. In the young male bird the plumage is of a reddish brownish grey, with dark streaks, and upon the wings there are two clear reddish yellow stripes. The female resembles that of the linnet. Rose Bullfinches were often seen by Radde upon the Bareja Mountains. During the month of September they lived in small parties of from six to twelve birds, but in winter they only flew about in pairs, and towards the spring disappeared entirely. Plantations of oaks or black birch-trees are generally preferred by these birds to any other localities, though they are fond of frequenting well-wooded valleys. About noon they separate and repose lazily and carelessly upon the branches; but during the forenoon, whilst seeking food, they are always active and on their guard against danger.

THE CARMINE BULLFINCH.

The Carmine Bullfinch, or Riband Finch (*Erythrothorax erythrinus*) is six inches long and ten inches across the wings. The wing and tail feathers are deep brown, the upper part of the neck bright carmine, and the breast white, marked with carmine red. The male of a year old and the female resemble the female linnet. The Carmine Bullfinches inhabit woods and districts covered with reeds in the north of Europe and Asia, and are found in great numbers in Sweden, Finland, and Russia. According to Jerdon, this species is also met with as a winter guest throughout India, being seen very frequently in the north, but more rarely in the southern parts of that country, principally inhabiting mountainous districts. "I have," he says, "generally found this bird in the bamboo plantations; indeed, it is called in the Telegu dialect the *Bamboo Sparrow;* it also frequents

THE DESERT TRUMPETER (*Bucanetes githogeneus*).

gardens and thickets, and lives almost exclusively upon the seeds of the bamboo and of various other plants." The Carmine Bullfinch is often captured on account of its agreeable song: Radde met with it on the Steppes and at Baikal, but more frequently on the banks of rivers, and sometimes saw solitary individuals even at an altitude of 8,000 feet above the level of the sea. We are not much acquainted with the habits of this bird, but know that it prefers well-watered or boggy plantations, and feeds upon various kinds of seeds, amongst which we must no doubt include those of reeds, as it is principally met with where beds of the latter are to be found. In its demeanour it reminds us as much of a linnet as of a bullfinch. Its movements are light, its flight undulating, and its call a clear piping note. Blyth tell us that the "Tuti," as this species is called in India, has a weak, twittering, but gentle and expressive voice, the sound of which is something between that of a goldfinch and a linnet, while its call resembles that of the canary. In Kamschatka its notes have been imagined to sound like the Russian sentence, "*Tschewitschu widal—I have seen the Tschewitschu*," the Tschewitschu being a large kind of salmon, which is the most highly-prized fish of that country, forming, as it does, a valued article of food; so that the song of the Carmine Bullfinch is not only looked upon as a herald of spring, but as announcing the blessings that she brings in her train. The nest is built in clumps of willows or canes, and always in the vicinity of water; it is formed of the stalks of plants, straw, or fibrous roots, and is lined with wool or horsehair. The eggs are larger than those of the linnet, and of a green colour, with red spots spread most thickly over the broad end. Tame Carmine Bullfinches are considered great curiosities; whilst writing, however, we are so fortunate as to have a male of this species before us. When it first came into our possession, the autumnal moulting was just commencing, and continued until December, leaving the once beautiful creature with a dull coat. Towards the middle of February it began to sing so charmingly as quite to exceed all our expectations. Naturalists who have described the notes of this bird have not by any means done it justice, for its song may bear comparison with that of the most gifted Finches; its voice is as melodious as it is copious. The call is uttered loudly, the actual song, on the contrary, being very soft, reminds us of the tones of the goldfinch, linnet, and canary. The habits of our tame bird are very entertaining; it is constantly in motion, hops about its cage with much alacrity, and will hang like a titmouse from the wires at the top. The shyness it at first exhibited has quite disappeared, and it now greets its acquaintance with a cry of recognition. It eats millet, canary-seed, and ants' eggs, taking but few of the latter; nor does it seem partial to green food. The Carmine Bullfinch is replaced in America by a similar bird, and a species very closely allied to it is found in Arabia Petræa.

THE SIBERIAN BULLFINCH.

The SIBERIAN BULLFINCH (*Uragus Sibericus*) is remarkable from the circumstance that, unlike most bullfinches, its tail is as long as its whole body; the fourth tail-feather on each side being the longest, the others graduating gently to the middle. The beak is of moderate size, and the upper mandible slightly bent over the lower. The fourth quill of the wing is longer than the rest. In colour the Siberian Bullfinch resembles the Rosefinch; the plumage of the old male is almost entirely of a rose colour, darker on the back, owing to the prominent marking of the shafts of the feathers. The head and throat are whitish, and of satin-like brilliancy, particularly after the moulting season. The lower part of the body is very brilliant, being of a bright carmine-red, and the beak is surrounded by a line of the same hue. The individual feathers are dark grey, lightly edged with pale carmine, and the wings and tail are also vividly tinted with the latter colour. The small upper wing-covers and shoulder-feathers are white upon the tip and outer web, or bordered with white, giving the closed wing the appearance of being white, marked with a crooked line of grey. The three external tail-feathers are also white as far as their dark shaft, and a dark border on the inner web, which becomes broader towards the middle of the tail, the feathers in the centre being merely edged with white. The female is of an olive or greyish green. The Siberian Bullfinches inhabit the marshy, reed-covered districts of Northern Asia. In the autumn they congregate in parties of from ten to thirty, and fly about uttering a monotonous piping note. In Irkutsck these birds assemble in great numbers during the month of September, and many are captured by bird-fanciers; but they entirely lose their vivacity when in a cage, and do not long survive. In Oron the Siberian Bullfinch is found in company with the Bohemian Chatterer; large flocks are also seen in the Bareja Mountains about the end of September. The flight of this species is somewhat undulating, and produces a buzzing sound.

We are far better acquainted with the next bird that we shall describe—a most splendid and interesting member of the family of Bullfinches. It inhabits Africa, but frequently makes its way into Central Europe.

THE VINOUS GROSBEAK.

The VINOUS GROSBEAK, or, as it is sometimes called, the DESERT TRUMPETER (*Bucanetes githagineus*), is met with both in Egypt and Nubia, where we have killed many specimens; but for all this we cannot pretend to as intimate an acquaintance with it as Bolle, who has made it the subject of one of his most animated descriptions. We much regret that our space does not admit of its insertion at full length, and we must, therefore, present it to our readers much curtailed, and intermixed with such observations of our own as are likely to add force to his statements. "Far beyond the fruitful coast of North-eastern Africa, and far beyond the Atlas Mountains, we find a new kingdom lying in the desert occupied by few but strange inhabitants. All is not dead and silent in this dreary waste, nor are its waves of sand for ever untouched except by the breath of the death-bearing simoom. It has its wells, where the feet of the caravan have made their path, its little oases, sheltered by the clustering palm, and its valleys rich in brooklets filled with water collected from the winter rains. Within the heart of the Sahara, and not merely on its borders, we occasionally find deep glens planted with the tamarind and mimosa, and the most unlikely places, at certain seasons of the year, produce plants peculiar to the desert. Even in these dreary regions, where vegetation struggles with difficulty through the sun-burnt soil, we need not seek in vain for animal life. This immense expanse, extending, as it does, from the Euphrates to the Senegal, has been branded by nature as an unfruitful wilderness, and all its living inhabitants are formed to harmonise with the desolate plains that they inhabit." We will not follow Bolle through all his illustrations of the suitability of the creatures found in the desert to the localities in which they are placed, but will proceed at once to his description of the Desert Trumpeter. "The Desert Trumpeter, the 'STONE BIRD' of the Arabs, the 'MOROS' of the inhabitants of the Canary Islands, is a lively and beautiful bullfinch, of about the size of our canary bird. Its body is compact, and its scarlet beak, owing to its parrot-like shape, appears somewhat thick, but not sufficiently so to interfere with the elegance of its form. The feet are remarkably delicate for a creature that passes so much of its time upon the stony ground. The plumage is comparatively rich, the bridal attire of the old male bird being a mixture of rose-red and satin-like white feathers, the former colour increasing in extent and depth of hue as the bird becomes older; it is darkest in the spring, when the plumage is of a deep rich crimson. These colours, however, become much paler towards the autumn, at which season the tints of the male closely resemble those of the female, whose coat is of a dull yellowish red. Many varieties of shade are seen in this species, some males presenting the appearance of having been dipped in blood, whilst others are of a greyish hue. The red colour is not confined to the plumage, but spreads over the whole body, so that a Desert Trumpeter, when plucked, might properly be termed a little *Red-skin!* During the spring the top of the head and neck are a pale ash-grey, with a brilliant gloss, the shoulders and neck being a brownish ash-grey, with a reddish tinge produced by the red-coloured borders of the feathers. The large wing-covers are pale brown, edged with bright rose colour, and carmine red on the outer web. The female is of a brownish grey over the whole of the upper part of the body, and on the lower parts light grey marked with red; the belly is of a dirty white." Those who would become acquainted with the home of this species must wander into the desert to which it properly belongs. Bolle found it breeding on the Canary Islands, principally upon the most eastern, namely Lanzarote, Fuerta-ventura, and the Great Canary. We ourselves have met with it all over the greater part of Upper Egypt and Nubia, as far even as the Steppes, where it entirely disappears. We also found it in the desert parts of Arabia. From these regions this bird has been known to reach the Greek Islands, and even Provence and Tuscany. In Malta it may frequently be seen during the winter. The places frequented by the Desert Trumpeter are barren spots exposed to the hottest rays of the sun; it prefers arid and stony places, where scorching heat blazes down upon the burning rock, and seems to luxuriate in glare and dazzling brightness that are perfectly blinding to the traveller upon these treeless wastes. The favourite haunts of the Desert Trumpeter yield but few blades of parched, dry grass, and the stunted shrubs to please its taste must be few and far between. On such a spot it delights to dwell, hopping from stone to stone, or gliding along near the ground on noiseless wings. It is seldom possible to follow the course of this bird to any distance, for the reddish grey of its plumage blends as perfectly with the surrounding stones and leafless shrubs as do the paler tints of the young with the colour of the sand, tufa, or chalk. To this difficulty is added that of the dazzling and deceptive play of light so common in these deserts, which teaches us to appreciate the delightful relief that grass and foliage afford to the weary eye. We should soon lose the object of our pursuit were it not for its voice, which constitutes its most remarkable feature, and will prove our best guide in this search. Hark! a sound like that of a tiny trumpet is ringing through the air; it swells and trembles, and if our ear is acute enough we shall find that this strange clang is preluded or followed by a few light silvery tones, which fall, bell-like, upon the desert silence, much resembling almost inaudible notes struck upon a musical glass by an invisible hand. At other times the sound it produces is extraordinarily deep, and not unlike that made by the tree-frog of the Canary Islands, consisting of a few harsh notes rapidly repeated, and which, strangely enough, are answered by the little creature itself, the second sound being produced by a sort of ventriloquism, and appearing to come from some distance. Few things are more difficult than to attempt to render the note of a bird through the medium of our alphabet, and in this case it would be particularly so, for the voice of the Desert Trumpeter consists of tones entirely different from those to which we are accustomed, and must be heard before it can be imagined. No one would expect to find a singing bird in such localities as those above described, and the fantastic voice of this creature appears well suited to the places it inhabits. The cry mentioned above is often followed by a succession of crowing, rattling sounds, which, like its trumpet-call, seem by their strangeness so completely in unison with the surrounding scenery, that we always stood to listen to them with pleasure, and wished to hear them recommence. In such places as are entirely covered with moving sands the Desert Trumpeter is never met with, as it is not fitted like a Curlew or Courser to run with ease over loose ground; it frequents the barren lava streams upon which not a blade of grass could grow, and in such fissures and holes as these places offer it finds a hiding or resting place, but is never seen upon a shrub or tree. In inhabited districts the Desert Trumpeter is very shy, only seeming to have full confidence when surrounded by silence and solitude; but in its native haunts the young may be often seen perched close beside their parents, and when a traveller approaches them they only acknowledge his presence by staring calmly in his face with their bright little black eyes. These birds may generally be met with all along the rocky shores of the Nile, and from the valley of that river as far as the desert. In the northern and middle parts of Nubia they alight upon the ground in parties consisting of fifty to sixty, or fly over and about the rocks; indeed, the steeper and more rugged these latter are the more attractive they appear to be.

The food of the Desert Trumpeter consists almost exclusively of different kinds of seeds, with probably a small quantity of leaves or buds. Water is an indispensable requisite. However troubled, scanty, or lukewarm the spring may be, these birds will visit it at least once in the day, so that their appearance is ever a welcome sight to thirsty travellers. They are always seen at the spring, both morning and evening, drinking much and in long draughts, and frequently bathing in shallow water. The breeding season commences in March, at which time the male has donned his gala dress, and, with his chosen mate, has separated himself from the flock; the little couples may very frequently be found perched sociably near the clefts of the rocks, whilst through the air rises the protracted trumpet-like call of the male, and the lark-like note of the female. We saw a pair of these birds upon the banks of the Nile, busily carrying away materials for their nest, but were unable to discover what they consisted of, as the rocks on both sides of the stream offered far too secure a brooding-place to allow us any chance of finding them; we learned, however, from the goat-herds that the Desert Trumpeter builds in the clefts and fissures of the blocks of lava, or under large overhanging stones. The nest, we were told, is artistically constructed of large blades of grass found in the desert, and lined with wool or feathers; in this the three eggs that constitute the brood are laid It is probable that these birds breed twice in the year, and that they only again join the flocks amongst which their young ones are already numbered, when their parental duties are accomplished. During the autumn and winter they wander to a considerable distance, appearing even in the Canary Isles, and some instances have been known of their falling exhausted upon the deck of ships, that were passing in that neighbourhood. They are never molested by man, and were there no such creatures as Wild Cats and Ichneumons, Falcons or Kites (the latter being very destructive to them in their winter flight through the desert), these remarkable birds might live an undisturbed and happy life. The naturalist may, with care, capture them while drinking, and as many as heart can desire may be obtained from among the stones. It is, however, difficult to take them alive, as a decoy of the same species is indispensable for the purpose. The latter should be fastened in some desert place, or on the borders of a stubble-field, as far from trees or bushes as possible, in such localities as they are known to frequent. The decoy-bird instantly commences uttering its incessant call, and soon attracts large numbers of its wild companions, who alight and hop, as though dancing from one stone to another; they will linger for a moment at a distance, but come near enough to be recognised by their plumage and the brightness of their eyes; next they begin to peck up the food that is strewn about, and a few hours later behold them captives in the net. At first the little prisoners are wild and defiant, but soon become tractable, and eat the canary-seed laid before them. The sport of catching these birds is one that we have fully enjoyed, and may boast our skill in this respect. What could be more exhilarating than an expedition, net in hand, during the early morning, through those boundless plains, when, after a short concealment behind a mass of rock, we emerge to find our labours so richly rewarded? We brought ten Desert Trumpeters with us to Germany, and feel fully entitled to speak as to their qualifications as domestic pets. On their passage home we had a terrible storm, that lasted for many days, and during the whole of that time the birds, in defiance of the cold, continued to pour out their song.

The fact above recorded shows the Moros to be hardy, much-enduring birds, which, though they love to seek shelter in a warm corner, can endure a considerable degree of cold. Even in this severe climate they may be kept in the open air from April to October, although they should not be exposed to frost. Our own are very social, and fond of expressing their confidence by the cheerfulness of their song—indeed, that of the male may be heard late into the autumn and winter. Unlike other birds kept in a room, they are most lively in the evening; no sooner is the lamp lighted than the little captives begin to trumpet forth their cry. The concerts with which we are entertained at these times are most amusing. The performance begins with their loud and clear trumpet-call, changing gradually into the protracted droning sound that mainly constitutes their song; after which they give utterance to a variety of noises, some of which are not unlike the mewing of a cat. At another time they will commence with light clear notes, resembling those of a little silver bell, and these are succeeded by an entirely different cry, which we might compare to the song of a Bunting. Their quavering call is usually followed by one much deeper and rapidly uttered, and their changes of temper are expressed by various tones, which are poured forth with great point and expression. The Moros are rarely heard to chatter amongst themselves, as do the smaller kinds of parrots, but merely employ a sound not unlike the cackling of a hen three or four times repeated, and their cry when alarmed or surprised is quite peculiar. Should any one attempt to catch them, they quaver forth a piteous sound, so full and expressive that we are astonished that it can be produced by so small a creature. The sound to which we allude is uttered with the head laid back and the beak wide open, while the gentler notes, on the contrary, are produced with the beak closed. During their song, and particularly in the breeding season, these birds accompany themselves with a variety of the most comical movements, dancing about their companions, and chasing each other with great zeal. It is not unusual to see the male bird, with its body erect and outspread wings, looking like the strange figures we employ as armorial bearings.

When caged, the Moros still appear to prefer living upon the ground, over which they hop rather than walk, and here they usually pass the night. They will often conceal themselves, but never creep into holes that have a narrow entrance. When a party of them is engaged in preening and expanding their feathers in the sun, the spectacle they afford is very striking and beautiful. Unfortunately, in captivity their plumage soon loses its magnificent red colour, but, despite its loss, they always present a pleasing appearance. The Desert Trumpeter should be fed, like others of its species, upon seeds, in the choice of which it is far from dainty, though it prefers hemp or millet, and will also eat the green heads of the dandelion, the seeds of which it picks out most dexterously; neither does it refuse ears of corn nor the leaves of some plants, such as lettuce, cabbage, &c.; but it will not eat insects, with the exception of the pupæ of ants. In fact, it is by no means particular as respects diet, and is very easily reared. The Moro will frequently breed in captivity, and with a little care and patience may be completely tamed; it does not require any artificial warmth, for the scorching days and icy cold nights of the Sahara seem to render it indifferent to any change of temperature.

Should the Moro be separated from its species it will seek the society of other birds, and we have known a case in which a Desert Trumpeter mated with a small pigeon (*Columba passerina*) of twice its own size. For the construction of the nest it prefers a cage that is hung up at some height, the bars of which are rather wide apart, and will only build with straw, which they collect by beakfuls at a time, but utterly reject hay or moss as unfit for the purpose. The interior is lined with feathers. The male bird carries some of the materials to the nest, but it is constructed almost entirely by the female. The pair we observed spent some time inside, one entering as the other left, and they appeared occasionally to have considerable difficulty in managing the conveyance of some of the long straws, with which they grappled. Our birds laid their first egg in April, and another was daily added till there were four. The mother, who but rarely left the nest, would probably have sat upon her brood, had we not determined to sacrifice half her stock on the altar of science. The remaining two eggs we placed in the care of a canary that was an excellent sitter, and brought her young charges out of the shell within a fortnight of their being placed under her. The nestlings were by no means so unsightly as those of singing birds usually are, and were covered with a thick, fine, white down, which formed a sort of crest upon the head; the bare places on the neck, &c., were of a flesh colour. In spite of the care taken of these young birds they died when but a week old, and that without having grown much larger. Our Desert Trumpeters soon proceeded to lay a second supply of eggs, and from the third to the fifth of May were employed in the construction of another nest, which, however, was not completed, as the little couple preferred returning to their old home, after having put it thoroughly into repair. On the ninth of May the first of three eggs was laid, but the female became sickly, and, though we left her in quiet possession of her stock, would not brood, but flew about the room with streaming plumage, as though in search of some remedy that was suggested by her instinct, but unattainable in captivity. During this time the male bird kept faithfully by the side of his little mate, and after her death was inconsolable for many days. The eggs are somewhat large considering the size of the parent bird, and of a light sea-green, or even paler shade, sprinkled over with a few reddish-brown spots or streaks, which sometimes form a kind of wreath round the broadest end. This marking is occasionally varied by delicate streaks, zig-zag lines, or large spots arranged in a somewhat undulating manner, and placed principally over the most uniformly tinted portion of the egg. It is much to be regretted that the excellent capabilities of the Moro have not yet attained for it the place it merits among our domestic pets, and that no European traveller has as yet given particular attention to supplying us with living birds.

The Bullfinches we are next about to describe differ from those already mentioned in the inferior richness of their plumage, which is neither so varied nor so bright in its hues, although beautifully marked. Amongst them we number

THE BULLFINCH.

The Bullfinch (*Pyrrhula vulgaris*) is called also by the names of Blood, Red, Gold, Flame, and Leaf-finch, Red-fighter, Red-bird, and others too numerous to mention, for its titles would really occupy more space than we could afford for their enumeration, many being descriptive of its habits, others derived from the markings and colours of its plumage. This species is from six to seven inches long, and from ten and a half to eleven inches across. The length of the wing is three and a half inches, and the tail measures two and a half inches. The old male is of a rich deep black upon the throat, wings, and tail, and ash-grey upon the back; the rump is white, and the rest of the lower part of the body a bright red. The female differs from the male in the greyish colour of the lower part of the body, and the smaller proportion in which bright tints are found among her feathers. The young ones are without the black mark upon the head. The wing is at all ages striped with two greyish-white bands that run in the direction of the carpal joint. Some varieties are white, black, or speckled. Bullfinches are found throughout all the countries of Europe, though during the winter they usually frequent the most southern parts of the continent, preferring such places as abound in woodlands, and never visiting the more open districts except during their passage to another locality—indeed, these birds never quit the woods except compelled to do so in search of food, and it is only when the snow appears that they leave their shelter to visit the orchards, fields, or gardens of the surrounding villages, and seek such berries and seeds as have escaped the observation of the rest of their feathered relations. For the greater part of the year, these little songsters live in pairs, but during their short excursions they congregate in small flocks, which fly about the neighbourhood on the most amicable terms. At the commencement of their raids upon the country none but male birds are of the party, but these are afterwards joined by the female portion of the community. It is only under peculiar circumstances that they travel beyond their native land, and are therefore but rarely seen in the south of Spain or Greece. They pass their time in flying from one tree to another, only alighting upon the ground when driven to do so by dire necessity. Their habits are very cheerful, and calculated to render them favourites with all who observe them attentively. One of the most distinguishing characteristics of these creatures is their attachment to each other. Should one of them be killed they cannot endure to leave their companion on the ground, and make every effort to take the body with them. This habit is the more striking when the party consists of only a few birds, and has frequently quite touched our heart. On one occasion in particular, we had shot one of two males that were perched upon a hedge; the other immediately flew away to a considerable distance, but very shortly afterwards we saw it return to the spot upon which its little associate had fallen.

The Bullfinch hops over the ground in a somewhat ungainly manner, but is most adroit in its movements upon trees. Sometimes it will rest upon a branch with its body in a horizontal position and its feet stretched out, and at others will perch bolt upright, or hang head downwards from the twigs. Its long and fleecy feathers are but rarely laid close down upon its sides, thus causing it to seem much larger than it really is. Whilst eating or flying it presents a somewhat more compact appearance, but when in a cage always allows its plumage to droop about its body. A tree full of these birds is a very pretty sight, the red colour on their breasts being seen to great advantage among the green foliage, and in winter their bright plumage contrasts prettily with the snow. The Bullfinch does not exhibit much sensibility to cold, and is lively and cheerful even during our most severe winters, always of course supposing that it can find sufficient food; such powers of endurance are easily explained if we consider the thickness of its feathers, and this density of plumage has considerable influence upon its flight, which is slow and undulating, much resembling that of the Chaffinch, owing to its habit of alternately extending and shutting its wings; it will sometimes hover in the air, and then plunge suddenly with closed pinions upon the selected spot. The call-note is a plaintive cry, employed by both sexes, generally uttered when flying, or about to perch or quit their resting-place, and is capable of a considerable variety of expressions—another proof of the delicate organisation possessed by these interesting birds; for sounds which to our grosser ears appear almost identical, have to them innumerable significations. The song of the male is in no way peculiar, and somewhat harsh; it may be heard almost throughout the entire year. Seeds of trees and grasses constitute the principal food of this species, and it will also devour the kernels of fruit. The seeds of fir and pine trees are obtained by picking them from the ground, as the little creature is unable to rob the cone of its contents, though it can extract the stones from fruit with great dexterity, throwing away the outer part as unfit for food. Its presence upon a tree is often indicated during the winter by the quantities of refuse thus disposed of. Grains of sand are always necessary to this bird, in order to assist digestion; the young are fed principally upon insects. In Europe the Bullfinch makes its nest by preference in such retired spots as are well covered with trees, though it will occasionally settle in parks or large gardens, and we have heard of an instance in which a little pair built in the ivy that surrounded the lodge of a gentleman's seat. The nest is usually placed at no great distance from the earth, either in the forked branch of a low bush, or on the ground, snugly supported against the trunk of a tree; indeed, so invariably do they choose these situations, that their nests have never been found at any considerable height. In its general construction the little dwelling resembles that of the Greenfinch, being formed externally of small portions of fir, birch, or pine twigs, upon which a second layer, composed of fibres from various roots, is placed, and this again is lined with the hair of the deer or horse; sometimes a little wool is mixed with the horsehair. In May, from three to four small, round, smooth eggs are deposited in the nest; they are of a light green, or greenish-blue colour, covered with pale violet or black spots, and reddish-brown dottings that form streaks or lines. The female sits upon her brood for about a fortnight, and is tended by her mate during that time; both parents combine in the care of their offspring. The nestlings are fed at first upon insects, then with seeds that have been softened in the crop, and afterwards with the same in their natural state. Should there not be a second brood, the young remain for a long time under parental tuition.

Those who wish to rear these birds should take them from the nest while still unfledged, and the sooner their education commences the more profitable it is likely to be. In the woods around Thüringen hundreds of young Bullfinches are caught annually, and sent, when properly educated, to the principal capitals of Europe, and even to America. The course of instruction begins from the first day of their capture, and the principal thing that is necessary is that their instructor should be able to whistle the air he is teaching them with great clearness and precision. Persons have tried to teach these little birds to sing with a hand-organ, but with little success, for even the flute cannot produce a sound so delicate as that uttered by the lips of a good whistler. Some Bullfinches can learn to sing two or three tunes without any great difficulty, whilst others never acquire precision. Some will retain a tune during their whole life, and others again forget it entirely during the moulting season. The voice of the female is much inferior to that of her mate. We have often heard the Redpole and the Blackbird pipe extremely well, but these do not approach the Bullfinch in the purity, flexibility, and fulness of its notes. It whistles in such flute-like tones that the listener's ear

FEMALE BULLFINCH AND NEST.

is never weary. A friend of ours possessed a bird of this species, which he had reared and trained himself. The cage was hung quite low, so that visitors could approach. When its owner wished it to sing a tune that it had learnt with great exactness, he went to the cage, called his favourite by name, bowed three times, and each time was answered by the bird with great liveliness and joy. After the third salute the little creature commenced its exquisite song, singing it perfectly, and then pausing to receive its master's bow of satisfaction, exhibiting at the same time signs of much delight if praised for its efforts. One circumstance in this performance was remarkable : it would respond to and perform, after receiving the necessary salutes from any *man*, but utterly refused to obey the signs or commands of a lady. A female relation of its owner tried to entrap the bird, by putting on its master's hat before approaching the cage; but this device was useless, the ungallant little songster proved as obstinate as ever. To such a point of cultivation as this the Bullfinch seldom attains, except taken very early from the nest, and placed where no other sounds are heard until the desired air is acquired, as it can imitate many noises with facility. We ourselves have heard one whose song was compounded of a portion of a tune, the chirp of a sparrow, and the crowing of a cock.

THE GIRLITZ (*Serinus hortulanus*).

Few birds are to be found so suitable for our drawing-rooms as the Bullfinch ; it shows great attachment to those whom it likes, and is evidently conscious of either reproof or praise. Leury mentions a Bullfinch of his own, that testified great pleasure whenever a poor man out of the neighbouring village where it had lived entered the room, and was quite uneasy if it heard a voice at the door which it knew and recognised ; indeed, we have known instances where these birds have died in consequence of too much excitement. A lady friend of ours had a Bullfinch so tame that she allowed it to fly about the room, and was in the habit of lavishing caresses upon it. One afternoon, being somewhat busy, her little companion did not receive the customary attention, for which he clamoured so loudly that his mistress at length hastily caught him, replaced him in the cage, and covered it with a cloth; the poor little creature was no sooner treated in this manner than he uttered a few plaintive notes, as though imploring for notice and freedom, and then, hanging his head, fell dead from his perch upon the floor of the cage. An exactly opposite case was related by a gentleman of our acquaintance. The narrator took a journey, and, during his absence, his Bullfinch appeared very mournfully silent; on the master's return, however, the bird was overwhelmed with delight, flapped its wings, and fluttered up and down, bowed its tiny head repeatedly, as it had been taught to do, at the same time pouring forth a song of welcome; suddenly all was silent—the little favourite lay at the bottom of its cage dead with joy. If trained while young, the Bullfinch may be allowed to fly in and out at will, and Leury gives us an interesting example of this fact. During the spring he let a female Bullfinch, that he had had for a year under his care, out into his garden, and for many days afterwards the bird would fly about, returning occasionally to the house, but at last disappeared entirely until the following autumn; when lo! one morning she flew into the sitting-room, as tame as ever. The following year she was again set at liberty, and returned in the month of June with four of her young ones, apparently as confiding as before, and most desirous to persuade the little brood to consider her late master as a friend; but these endeavours proving fruitless, she again left, and in September once more made her appearance with three of her second family. She remained for a short time, and then departed; but positively came back late in the autumn without her little flock to pass the winter in her old home. The following spring she was set at liberty for a third time, and was observed not long after to enter her cage, peck up some of the food it contained, whilst her mate lingered upon a neighbouring tree, and then flew away and was seen no more.

These various little anecdotes will, we think, justify our assertion that the Bullfinch is well worthy of our regard and attention. As to the care it requires, give it a nicely-kept, roomy cage, water to bathe in, and a little rapeseed, and all its wants are satisfied. A small quantity of green-stuff may also be added, and on this fare a little couple of Bullfinches may even be persuaded to undertake the cares of a family.

The capture of this species is attended with no difficulty, as its social habits render it an easy prey. Naumann tells us that any one who can tolerably imitate its call-note may entice it to the spot upon which a snare is awaiting it; indeed, a live decoy-bird is scarcely needed, as a stuffed specimen placed near the traps or limed twigs will answer every purpose, attracting the unsuspecting creatures in great numbers. In our opinion, to shoot a Bullfinch would be a crime; although it is true that it occasionally becomes somewhat troublesome by picking off the buds from the trees, yet, in spite of this, we hope that our readers will allow that its many pleasing qualities make ample amends for any of its troublesome propensities. Besides, in pleading for mercy, we must not forget that its enemies are already sufficiently numerous; martens and weasels, squirrels and dormice, hawks, sparrow-hawks, and falcons, crows and jackdaws, destroy both old and young, and materially limit their increase; many likewise perish during severe winters.

THE GIRLITZ.

The GIRLITZ (*Serinus hortulanus*) may be regarded as the type of a peculiar group of the Bullfinch family, allied on the one hand to the South African or Carmine Bullfinch, and on the other to the Canary, with which we are all familiar. The beak of the Girlitz is very short and small, less spherically vaulted than that of the Bullfinch, and moreover blunt, instead of being sharp-pointed at the tip ; the legs are short and weak, the wings comparatively long and pointed, the tail graduated, and the prevailing colour of the plumage yellowish or green. The male is a magnificent little creature, of about the size of a Siskin, three or three and three-quarter inches in length and eight in width, the tail measuring two inches, and the wing two and a half inches. The female is a trifling degree smaller. In the male, the fore part of the head, throat, and middle of the breast are of a bright yellowish green, the under part of the body light yellow, while the upper part and the back of the head and neck are of an olive green. The under parts are uniform in shade, but marked at the sides with two large, deep black streaks, the back is dotted with some very faint spots, running from the head to the tail; over the wings pass two yellow lines, the wing and tail feathers are plain black, edged with a greenish shade. During the autumn the feathers upon the middle of the back and wings are of an olive brown or reddish grey. The female is paler in colour, and more strongly marked than her mate; the young ones are of a dirty or pale greenish yellow, marked along the body with greyish-yellow streaks.

In Germany the Girlitz is numbered amongst the migratory birds, appearing there about the last day of March or first of April, and remaining until late in the autumn ; indeed, it spreads in a similar manner over the whole of Southern Europe, but in spite of this fact we can scarcely designate its wanderings as true migrations. This bird is particularly numerous in Spain, and is to be met with in all parts of its highlands and lowlands, if we except the country about Castile. In Catalonia it is as commonly met with as is the Sparrow with us ; every garden, every vineyard is enlivened by its presence, it abounds in every grove—even the summits of Montserrat affording it a welcome residence. Some few years ago the Girlitz was unknown in the interior of Germany, and was only found about the south-eastern and south-western portions of that country; but at the present time it is met with in considerable numbers around Dresden, and we ourselves have captured a little pair in the neighbourhood of Jena. The love of this species for certain districts is quite remarkable. Orchards situated near vegetable gardens form its favourite retreat; all such places as present these attractions are much frequented, whilst in districts that are deficient in gardens and fruit-trees the Girlitz is but rarely seen. We have observed that it rapidly increases and multiplies in any locality where it settles. According to Hoffmann, this bird does not inhabit the hilly parts around Stuttgard, although often met with in the fields or plains; while Homeyer tells us that it makes no distinction between high-lying and low-lying districts. The Girlitz is a spruce, brisk, lively little creature, with a moderately good voice, and considerable peculiarity in its habits, particularly during the breeding season. Strangely enough, the male birds are the first to come amongst us, and are afterwards followed by the females. The former, when they begin to arrive, attract attention by their loud notes and careless movements, perching upon the highest trees, raising their tails, and turning themselves in all directions, as they busily pour forth their song; but should the spring be wet or cold, they keep well under shelter of the trees, and only occasionally steal out to snatch a morsel from the ground, while their notes during such times are faint, few, and far between. As the breeding season approaches the song of the little strangers becomes more animated, and their gestures more extraordinary. The male, not content with exhausting itself to please its mate with its voice, stretches itself like a cuckoo upon the branches, erects the feathers upon its throat, spreads its tail as it balances and turns its body in all directions, then rises suddenly into the air, fluttering in a most curious manner, with somewhat of the motion of the bat; it next settles upon the tree, throwing itself from one side to the other, after which it will return to its first perch, and recommence its song. Should another male appear, nothing can exceed the rage of the jealous occupant, who pursues the intruder from one tree to another with furious indignation, and only leaves him after having inflicted a considerable amount of very severe chastisement for the liberty he has taken. The song of this species is somewhat peculiar, though we cannot exactly say that its tones are musical, being rather monotonous and shrill, yet still, to our mind, far from unpleasing. The nest, which may really be called a work of art, is formed of the fine roots of plants or blades of grass, and bits of hay. The interior is lined very delicately with hair or feathers, and the little structure is generally buried in the thick foliage of a tree or shrub. According to Hoffmann, pear-trees are preferred, but it will build upon apple, cherry, and, we believe, pine trees, while in Spain it is most fond of settling upon the boughs of the orange and citron. The brood consists of from four to five small, blunt-shaped eggs, of a dirty-white or greenish colour, marked principally at the broadest end with pale brown, red, reddish-grey, or purplish-black spots, dots, or streaks. In Spain we have found newly-laid eggs from April to July. It is probable that these birds breed twice in the year.

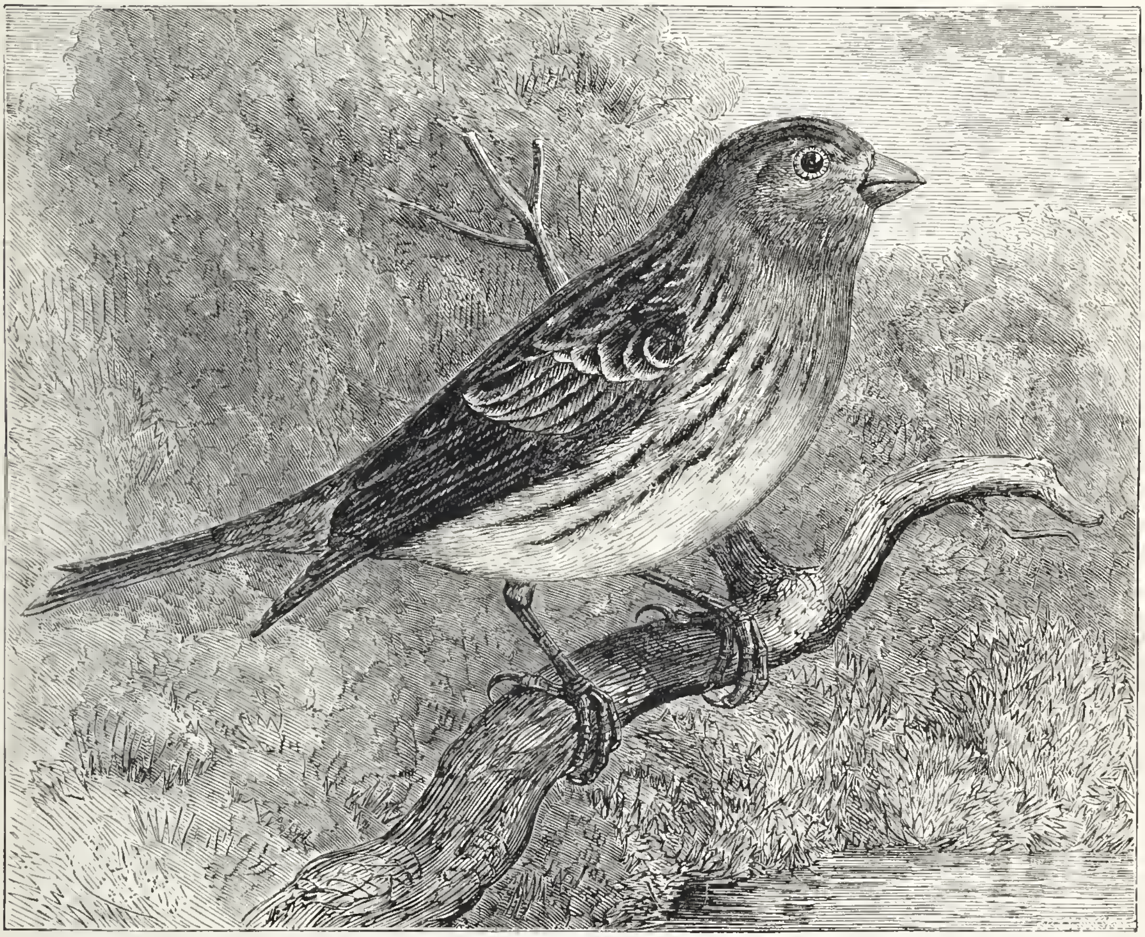
The nest of the Girlitz is not always very easily to be found, but if sought for carefully its situation will be betrayed by the female; the latter is fed by her mate during the whole period of incubation, and when hungry expresses her wants by calling to her little companion, so that any one wishing to discover their retreat needs only to stand under the tree and watch for the return of the male bird. The mother is very faithful to her little charges, and sits for about ten days upon her eggs. As soon as the young leave the shell they also call for food with a chirping kind of sound, and soon becoming weary of the nest, frequently leave it before they are really strong enough to do so. The parents feed them for a considerable time, and will even bring them food if they are confined in a cage placed near the tree—indeed, the latter is a very convenient plan by which to secure proper nourishment for the little prisoners until they have attained their full strength. The Girlitz feeds chiefly on all kinds of seeds, and may be kept when tame upon rapeseed, poppy-seed, or millet; water is indispensable. These birds are well adapted for a cage, and are very social. In Spain, when the breeding season is over, they assemble in large flocks at the commencement of autumn, and during such times associate in some degree with Goldfinches, Sparrows, and Fieldfinches. They are eagerly pursued by most of the smaller birds and beasts of prey, and the young not unfrequently fall victims to these marauders. They are caught by the Spaniards in great numbers and brought to market, where they are purchased both for the cage and the kitchen. In Germany the Girlitz is but little molested. In Spain it is trapped by means of the "esparto," a long, rush-like kind of grass that grows in great abundance on the Spanish plains. The blades of this grass, smeared with bird-lime, are placed in considerable quantities on the tops of the trees, their summits being thus converted into one large trap. The numbers so caught are most astonishing, for it will often happen that not one-fourth part of a large flock escapes in safety from the treacherous branches, even birds of considerable size being sometimes taken in this manner.

THE CANARY.

The CANARY (*Dryospiza Canaria*). Three centuries have elapsed since the CANARY-BIRD first left its native isles to become a citizen of the world, and now who could recognise in our beautiful golden little favourite the wild green species from which it is descended? The change reminds us of the difference sometimes observable between two brothers, one of whom has experienced all the advantages of society and cultivation, while the other has remained in his rustic but perhaps happier position. It is to Bolle we are indebted for the first reliable history of the Canary in its wild state, as until his time we were only acquainted with the tamed species. The writers of former times have given us many examples of this bird, but their accounts have bordered somewhat upon the marvellous. They were even mistaken as to its original haunts. The naturalists of the last century were somewhat better informed, but even Buffon has assisted in the spread of erroneous ideas concerning its history. "Goldfinches and Citronfinches," says Bolle, "must be contented to descend from the position they have hitherto occupied as supposed progenitors of the Canary. Buffon tells us that the

Canary belongs to the same species as the two above-mentioned birds, and has only changed in colour from difference of climate. Humboldt was the first who could speak with any authority as having seen the Canary in its wild state, having become acquainted with it in 1799, during his residence in Teneriffe." More modern ornithologists have been far from giving this bird the praise it deserves, and we have to thank Bolle alone for so beautiful and exhaustive a description of its life and habits, that nothing more remains to be desired. The following account is drawn from his work.

The writer we quote found this species occupying the seven wooded islands called the Canaries, and even some parts of Madeira, the latter fact leading him to suppose that this bird may have lived upon all these islands before their trees were cut down. It is principally to be met with in such places as are covered with wood or shrubs, and are situated near springs of water in the interior, which in summer form brooks, margined during the entire year by a border of delicate plants; it is also found in the gardens and houses of the inhabitants, and is quite as numerous in crowded towns as in the quietest nooks—indeed, it is seen in all parts, even at an altitude of 5,000 or 6,000 feet above the level of the sea, except in the thick damp forests formed by laurel and holly trees, beyond the borders of which Bolle never observed it to settle. It may be also frequently met with in the vineyards, or in fir plantations that cover rocky declivities. It is at present uncertain whether this bird occupies the high ground during the winter, but it has been found at an altitude of 4,000 feet late in the autumn. The wild Canary, which, even in its native woods, is called "Canario" both by the Spaniards and Portuguese, is considerably smaller, and usually more slender than these we see



THE WILD CANARY.

tamed in Europe. Those, on the contrary, which are kept in a state of captivity in the Canary Islands have completely retained their original dimensions by mating with birds newly taken from their wild state. The adult male wild Canary is greenish yellow upon the back, with blackish streaks upon the shafts of the feathers, which are so broadly bordered with bright ashy grey, that the latter might almost be described as the principal colour. The hinder part of the body is yellowish green, the upper tail-covers excepted, which are green, edged with ash-grey; the head and neck feathers are yellowish green with narrow grey borders; the forehead and two long stripes which run in a circular form over the eyes to the neck are of a greenish-gold colour, and the throat, upper part of the breast, and sides of the neck are, on the contrary, of an ash-grey. The lower portion of the breast is of a paler yellowish tint, the belly and under tail-covers whitish, the shoulders a beautiful siskin-green, bordered with pale black and green, the blackish wing quill-feathers are edged with green, and the blackish-grey tail-feathers sprinkled with white; the eyes are brown, the beak and feet a brownish flesh colour.

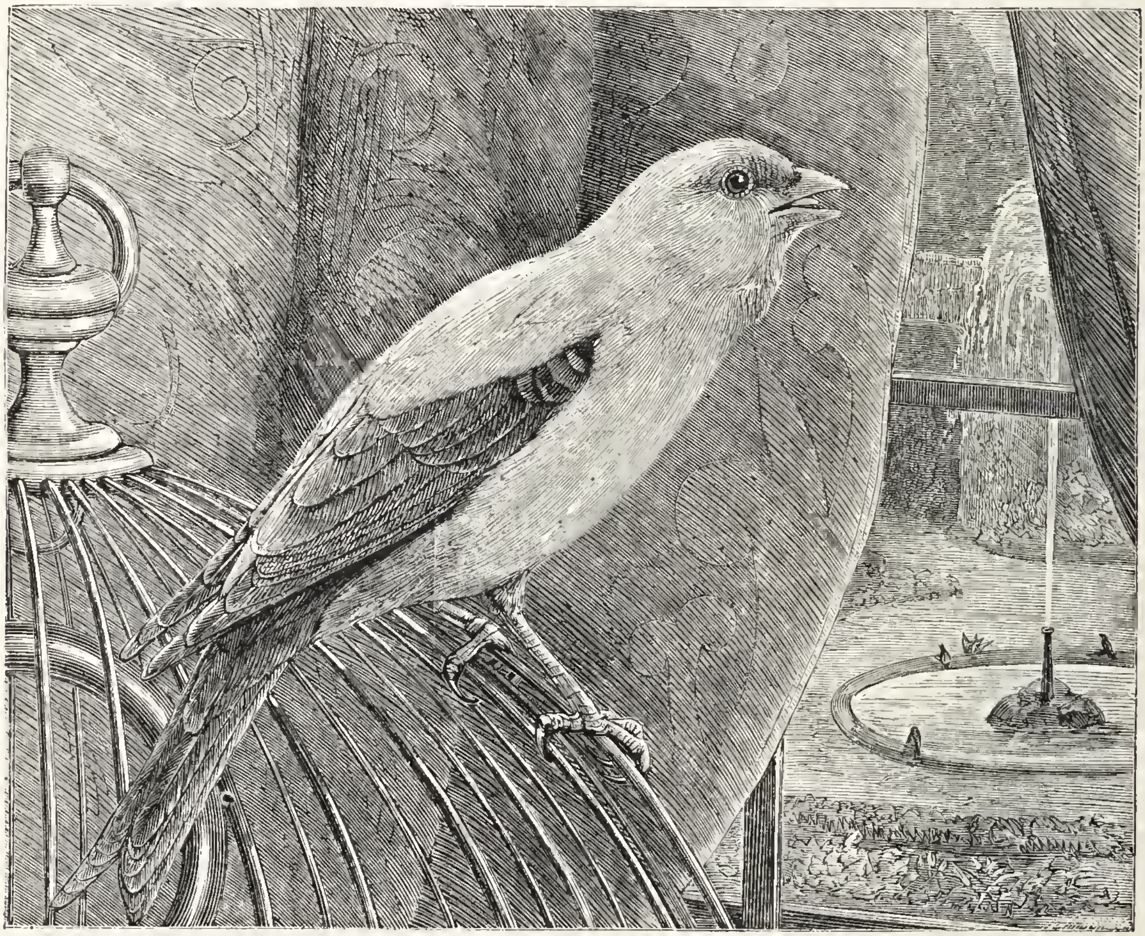
Bolle is of opinion that the plumage above described is only acquired at the end of the second year. The female is brownish grey upon the back, with broad black lines along the shafts of the feathers; the neck and top of the head are similarly coloured, but the ground colour of the feathers is green. The cheek-stripes are grey, the forehead green, and the cheeks partly greenish yellow and partly a blueish ash-grey. The neck is encircled by a line that is yellowish green in front, merging into blueish ash-grey at the back; this ring, however, is not very distinct. The shoulders and small upper wing-feathers are a light yellowish green, the whitish-grey borders of which are broader, but not so beautiful as in those of the old male bird. The lower part of the breast and belly are white, and the feathers at the sides of the body brown, with dark lines at the shafts. The plumage of the young birds is brownish, shading into yellow upon the breast, with a few touches of lemon-yellow upon the cheeks and throat. The colours are extremely difficult to describe, owing to the delicacy with which the different shades are blended, and we may therefore add that the plumage is almost the same as that with which we are familiar in what we call our tame green or grey Canaries.

The food of these birds consists principally of green herbs, small seeds, and delicate juicy fruits—a ripe fig, for instance, with its soft, juicy flesh and small kernels, is eagerly sought for and enjoyed, as soon as the too ripe fruit has burst its violet or yellowish-green mantle, for until this happy time arrives their small and delicate beak is quite powerless to penetrate the distended skin. A fig-tree, when its fruit has reached this point of ripeness, is indeed a beautiful sight for those who have been fortunate enough to see it literally covered by the various singing birds that are tempted to rob its branches. Blackbirds, greenfinches, tom-tits, and many others come in variegated confusion to share the dainty in common with our friend the Canary. Water is essential to its welfare, as it drinks much, and is fond of bathing very frequently. These birds pair and begin to construct their nest about the end of March, never, as far as we have been able to ascertain, fixing upon a spot that is less than eight feet from the ground, preferring trees with slender stems, either evergreens or such as don their foliage early in the spring. Amongst their favourite trees pears and pomegranates hold the first place. The orange-tree is not often selected, on account of its bushy crown, and the fig-tree is never employed for this purpose. The nest is always built in a retired spot, but is easily discovered on account of the constant coming and going of the male bird. The first that we saw was found towards the end of March, in a deserted garden of Villa Arotava, upon a box-tree about twelve feet in height, that stood above a myrtle hedge. The nest merely rested upon the tree, being built between the forked portions of a branch, and was beautifully constructed. It was broad at the base, and very narrow at the top, with a tiny little entrance. The walls were formed throughout of snow-white wool, woven together with a few blades of grass. The first egg was laid upon the first of March, and one was added daily till there were five in all, this appearing to be the usual number of a brood, though from time to time we have found but three or four in a nest. The eggs are of a pale sea-green, spotted with reddish brown, but are sometimes of a uniform colour; they exactly resemble those of the tame bird, and the time during which the female sits upon them is the same in both cases. The young remain in the nest until fully fledged, and for some time after are tended by both parents, and fed from the crop with great care. The Canary breeds usually four times in the year, but occasionally only three times. In July the moulting season commences, after which no more eggs are laid.

During the period of incubation the male bird perches upon a tree near his mate, and from thence delights her with his song of encouragement and sympathy. It is a real pleasure to listen to this pretty songster, as it inflates its throat and pours forth its lay, turning, as it sings, from one side to another, as though to bathe its glowing breast in the flood of bright sunlight. All at once it hears the call of its little companion, and darts with responsive tenderness to perch at her side—indeed, in our opinion this modestly-attired bird, as it sits surrounded by all the varied and delicious blossoms of its native trees, is a far more attractive spectacle than its more brightly-coloured and elegant brother, with whose appearance in captivity we are all so familiar. We do not deny that the beauty of the objects that surrounded these Canaries had much to do with the admiration with which they inspired us, and many a time they have caused us for a moment to forget that we were sojourning in a strange land, their song exactly recalling the voices of the warblers we had heard at home. Much has been said, and very varied opinions expressed as to the relative merits of the song of these birds when free or in captivity, and for our part we consider that such as have been tamed in no way surpass their brethren of the woods, either in skill or beauty of tone. Whatever trifling modifications may be noticed, either as regards greater purity of sound or more artistic performance, the song is unchanged, and proves that though the language of a country may be entirely lost, yet the notes of these feathered songsters remain ever the same. We fully admit that our tame Canaries are at a great disadvantage when compared with their brothers of the groves, for that which sounds delightful in a dusty room, gains unquestionably a thousandfold by being heard in a spot where the singer has God's heaven above him, and masses of roses and jessamine at his feet. We would, however, by no means lead the reader to suppose that all wild Canaries are equally gifted; with them, as with all other singing birds, many degrees of skill and beauty may be observed, and some we have heard would well stand the test of comparing their notes with the heart-stirring tones of the nightingale. The flight of the Canary resembles that of the linnet, being somewhat undulating. In their passage from tree to tree, the various members of a party fly at some little distance from each other, uttering their call-note whilst on the wing. In the breeding season these birds live in pairs, but during the rest of the year they associate in very large flocks, often, however, dividing into smaller parties, and passing most of their time upon a chosen spot, spending a considerable portion of the day upon the ground, and re-assembling after sunset to pass the night perched in the branches of their favourite trees.

The capture of these birds is, owing to their great sociability, unattended with any difficulty, and even nestlings will run at the call of a decoy. In the Canary Islands we have seen linnets or goldfinches employed for this purpose with success. The snaring of this species should be carried on very early in the morning, in such spots as are well watered and rich in fine trees. On these occasions we have always found much interest in observing, from some place of concealment, the various movements and lively gestures of the unwary little victims as they run to meet their fate, and have ourselves seen from sixteen to twenty birds caught during a few hours; of these the unfledged young formed the larger proportion. The Canary is a restless creature, and must pass some time in captivity before it can be taught to lay aside its wild habits. The birds we have kept began to moult at the latter end of August, and some of them had not entirely resumed their plumage by the month of December. These latter we imagined to be the youngest members of the party, and the yellow colour in all cases was first visible upon their breasts.

As regards the habits of the Canary when tamed, we quote Lenz, a naturalist well qualified to furnish all the particulars that could possibly be desired :—"In order to ascertain where the finest specimens could be obtained, I sought throughout the whole of Germany and its surrounding countries, not omitting to place myself in correspondence with various distant portions of the world, and am now fully persuaded that the choicest birds are to be procured at Andreasdorf, in the Hartz Mountains, and the neighbouring villages. In the above-mentioned place almost every house has its breeding-room set apart for their cultivation. Many families live entirely by this means, and we were told by an official belonging to the place that Canaries are sold to the value of 12,000 rix-dollars during the course of the year from this village alone. It is quite unknown when this business was first established in the Hartz Mountains, but that locality affords in plenty three great requisites for its success: wood in such profusion that the cost of warming the Canaries' apartments throughout the year is very trifling, abundance of rapeseed, and white bread, the corn for which is grown with ease in the beautiful meadows that surround the villages. The songs of the birds reared on this spot are very various, but in no case have we heard a really bad singer, while many possess voices of unusual power and sweetness."



THE TAME CANARY.

In Andreasdorf a bird of uniform pale yellow plumage, and without a crest, is much preferred, because those that are uniformly tinted cannot be spoilt by irregular markings, and because the male nestling of this species is easily recognised on account of its tints about the eyes and region of the beak; even after the young have left the nest this distinguishing feature is for some time observable, and the sexes may be thus readily ascertained. The superfluous female birds are sent early in the summer upon their travels through the world in the care of an itinerant salesman, and hundreds of the males are taken in October and November to be sold by wholesale dealers in large cities, or exported to Russia and America. The Canaries reared in other neighbouring districts cannot equal those of Andreasdorf in their song, though they are very superior to such as are obtained elsewhere. The following hints may perhaps be useful to our readers in the choice of a tame specimen:—First, entirely green birds, or such as are brightly marked with green, are usually very strong, and, in consequence, their voice is often disagreeably loud; secondly, such as are of a yellowish brown or dark yellow are weakly, and seldom breed; thirdly, the variegated kinds do not often have prettily-marked young; fourthly, such as have red eyes are weak; and, fifthly, should birds with a crest be preferred, the purchaser must be careful that there are no bare spots on it. In order to ensure a good singing Canary, it is necessary to procure such as have parents gifted in that respect, and during the course of instruction the bird should not be allowed to hear the song of finches, larks, and nightingales, as the notes which it would thus acquire would be unnatural, and therefore soon forgotten. In Andreasdorf the people are most careful only to allow the young to copy the notes of such male singers as are experts in the art, as should the little pupil, even when four years of age, hear a bad singer it is pretty sure to imitate all its faults, and even in old age will sometimes retain this tiresome trick. The Canary will learn tunes played upon an organ with little difficulty, but after a time often perform them inaccurately. We have tried the experiment of placing the pupil with two old males, and have always found it prefer to imitate the bird whose song gives it the least trouble, and thus it acquires shakes and trilling notes with much greater ease than the flute-like tones, or deep rolling song of the nightingale. A Canary belonging to an artist residing at Bordeaux, possesses the remarkable faculty of singing whenever it feels disposed with the beak closely shut, producing its song, which is very clear, apparently from the top of its throat, and giving the effect, as in ventriloquism, of a voice proceeding, not from its owner, but from some distance.

The cage of a bird under tuition must be placed in such a position that it can be constantly visited and instructed, and at such a distance from the window as will prevent its being disturbed, in which case it is liable to become irritated, and learn to scream or sing in a very disjointed manner. The diet should consist entirely of rapeseed and white bread steeped in water, so that the food being simple, the pupil may not be distracted from its song by the daintiness of its fare. Green-stuff or fruit should not be given to it, as producing the same result. The wires of the cage should be so close together that the bird cannot stretch its neck between them and look around, and should it appear inclined to try to peck at such things as bits of paper, thread, &c., these should be removed and four oats given to it daily, thus affording exercise for its beak. If the Canary has been always in the habit of living alone it should not be allowed to see another of its kind, or it will immediately begin to scream instead of singing gently; but if more convenient to place it with other males, the cages should be hung close together so as to enable them to be constantly aware of each other's presence. When a young bird has been trained in this manner for two years, it may be considered to have learnt all that it is capable of acquiring. As regards the cage, great care should be taken that it has no brass or paint about it; the floor should be strewed with sand, and the bird furnished with some atoms of clay or crushed egg or snail shells. The perches are best when made from the wood of the lime-tree. Great precautions are necessary to prevent the entrance of vermin into the cage, and should they be detected both cage and bird must immediately be washed with linseed or rapeseed oil. Except during the breeding season, the females may all be kept together in a large cage, that is, if they will live in peace, which is not always the case. The place in which the cage hangs ought to be kept tolerably warm, but should the bird be exposed to a hot sun a screen should be provided. In winter the females may be kept without injury in a room in which the temperature is below freezing-point, but the male under such circumstances refuses to sing; many experiments have proved to us that these birds can endure extreme cold if only well fed, and provided with snow to drink instead of water. Canaries should be screened from draughts. Some perfumes are very injurious to them; one evening we placed a blooming *Orchis bifolia* in a room occupied by three of these delicate creatures, and in the morning found the two females dead, and the male so overcome that he was only saved by prompt attention. The use of the common kind of lamp-oil blackens the feathers, but does not in other respects injure the bird. As to the most suitable food, we can only refer to the treatment adopted by the inhabitants of Andreasdorf, of which we gave a detailed account in a previous page. The average age attained by the Canary in Malaga is sixteen years, but we have heard of cases where by great attention they have lived to the age of twenty. The number of eggs laid by this species is large, and one reared by us produced as many as twenty-nine within the year; the eggs are white, and dotted with red at the broad end. The female broods from about thirteen to fifteen days; the young birds quit the nest soon after leaving the egg, and feed themselves within a week of that time. Before a month has passed the feathers, with the exception of those on the tail and wings, begin to moult, and the change is not completed for some months. By the ensuing moulting season the young birds have commenced singing, and the males are then easily recognised by the fluency of their song, the notes of the young female being quite unconnected. Should it be desired to render a favourite very tame, no food should be given in the cage, the bird being thus compelled to take all from the hand. The Canary is well known to be a most docile pupil, and will learn to exhibit its skill by spelling words that are repeated to it, selecting the letters in proper order from an alphabet laid before it; will find the required pieces of cloth from amongst several others; and has been taught to add up, multiply, or divide figures by the assistance of numbers given it to choose from. Others will sing when commanded, pretend to fall dead when a pistol is fired, then allow themselves to be laid on a little car to be carried to the grave by two other canaries, and when the journey is accomplished will jump up and sing a lively song. All these tricks are taught as with dogs or horses, by keeping them without food until the order has been obeyed.

THE FINCHES (*Fringillæ*).

THE birds belonging to this group are distinguished by an elongated, round, and somewhat blunt beak, a tarsus of moderate height, narrow and somewhat pointed wings, and a long and rather excised tail; the body is elongated and straight, the plumage compact, and in the male bird of bright colours, which vary considerably according to the time of year. The female is not so handsome as her mate, and the young, after the first moulting, resemble their mother. Finches are found all over Europe, in forests and plantations, or in rocky places covered with a growth of trees and underwood. They are very sociable, but by no means peaceful in their habits, as, though they associate freely with other birds, they are seldom long in their company before quarrelling commences. Seeds of plants and insects constitute their principal food; the young are generally fed with insects. All the males of this family are busy creatures, some of them much valued on account of their vocal powers, and the little injury they do is fully compensated by their many services, among which their song should take the first place. These birds are considered, especially in Germany, as migratory, being much addicted to long flights, although some are known to remain in the same country during the whole winter. They usually make their appearance amongst us early in the year, and build elegant and artistic nests, breeding from once to three times in the summer, after which they assemble in large flocks, fly from place to place, and then depart simultaneously for warmer regions. The favour in which they are held by many is very easily understood if we consider their really great gifts, sweet song, and the facility with which they are tamed. They have been the companions of man from the most ancient times, and in some places are as much valued as the Nightingale. In certain parts of Germany the Chaffinch is an actual member of the household, and quite indispensable to the family circle.

THE CHAFFINCH.

The CHAFFINCH (*Fringilla cœlebs*), or as the Germans call it the NOBLE FINCH (*Edelfink*), is by this very name at once placed first amongst its brotherhood, and is so common amongst us that it can rarely be mistaken for any other bird. Its length is six inches, its breadth across the wings seven inches, the female being somewhat smaller and longer than her mate. The plumage is strikingly coloured, and beautifully marked. The male is deep black upon the forehead, the head and neck ash-grey, the back brown, the lower part of the body (except the belly, which is white) of a rich red, and the wings striped in two places with white. The female and young birds are often of an olive-greyish brown, grey below, and the wings marked as in the male bird. The beak in the young is of a dusky light blue, in autumn reddish white, and always black at the tip; the foot is of a reddish grey, or dirty flesh colour, the eye brown.

The Chaffinch is found over the whole of Europe, if we except its most northern and southern countries; it appears in Spain only during the winter, and in the north is replaced by a species called the Mountain Finch. In Siberia it is as common as it is in Germany, and in Northern Africa a very similar bird is to be met with. The Chaffinch inhabits all kind of woods, frequenting the larger forests as readily as clumps of trees, plantations, and gardens, only avoiding marshy or boggy ground. One little couple lives close to another, but each bird defends its own chosen spot with great fury, and wages constant war against intrusion. After the breeding season is over these separate couples assemble, and form large flocks—which often include several other species of birds—and then start upon their exploring travels through the length and breadth of the land. At these times they do not appear more peaceably disposed than before, and quarrels and strife go on unremittingly. In Germany the Chaffinch is a summer bird, and though some few males may winter there, the mass of these lovers of sunshine leave for a warmer climate.

As they begin to assemble at the commencement of September, in October the flocks are ready for flight, and before the end of that month have entirely disappeared, to take up their winter quarters in Southern Europe, or North-western Africa, and some few in Egypt: spreading over mountains, valleys, fields, and gardens, everywhere numerous, and everywhere living, not in pairs, but socially; thus showing that these regions are not regarded as their home, but merely as a temporary abiding-place. When the spring commences they return to their old haunts, generally performing the journey in much smaller parties than when they took their departure—the males first, followed in about a fortnight by the females. It is very rarely indeed that both sexes return together. In fine weather the males generally make their appearance about the beginning of February, the principal parties arriving about March, the stragglers often not till April. Then may be heard their fresh cheerful voices, as they seek their old breeding places and choose their mates; as soon as this is done the building of the nest commences, and the little cradles for the young are generally ready before the trees are covered with leaves.

The process of making a nest is commenced by a search amongst the branches; a proceeding in which both birds take an active part, the female, perhaps, looking for what is required with the greatest earnestness, her mate, on the contrary, thinking more of his attachment to her, and his determination to keep off all rivals; for in their case, as sometimes happens with their betters, love and jealousy go hand in hand. At length a suitable spot for building is found upon a forked or gnarled branch, or sometimes even in the thatch of a house. The nest itself is most beautifully made, being as round as a ball, and open at the top. The thick outer wall is formed of green moss, delicate roots and blades of grass, and these materials are covered externally with bits selected from the tree itself, woven together by means of the webs of various insects, so that the nest might easily be mistaken for a part of the branch on which it is placed; indeed, even a naturalist would have the greatest difficulty in finding it, and the uninitiated could only discover it by chance. The interior is round, deep, and snugly lined with a bed of hair, feathers, and fibres of wool or cotton. Whilst the nest is being built, and during the time the female broods, her mate pours out an uninterrupted flow of song, and every other male responds to his notes with great zeal, for these little creatures are not only actuated by jealousy, but by ambition. Chaffinches, like other singing birds, strive to vie with each other in their performance; but the rivals soon become so excited in their efforts that their voices fail, and they are compelled to give vent to their rage by chasing each other through the branches, until at

THE CHAFFINCH (*Fringilla Cœlebs*).

last, literally seizing each other by the throat, and thus powerless to fly, they whirl round and fall upon the ground. In these battles the combatants seem blind and deaf to every danger, and risk their lives in their endeavours to vent their fury. As soon as the battle with the beak and claws is concluded, the musical strife is renewed, to be again terminated by a fresh onslaught of the furious and implacable little rivals. The breeding time of these birds may be described as one uninterrupted series of contests, for every male in the neighbourhood thinks it his duty to worry and rival his neighbour.

The eggs, five or six in number, have very fragile shells of a delicate blueish-green colour, varied with pale reddish-brown markings, and blackish-brown spots of various sizes and shapes. The female sits for about a fortnight, and is relieved by her mate during such time as she requires to go in search of food. The nestlings are fed by both parents exclusively upon insects, and require to be supplied with nourishment for some time after leaving the nest; when first hatched they have a peculiar kind of cry, but soon employ the same call as the old birds. These latter have scarcely parted from one brood than they commence preparations for a second, seeking another place for a nest, and building again, but with less care than before, the female laying only from three to four eggs. With the rearing of this second brood the duties of incubation are for the year at an end.

Chaffinches are much attached to their young, and utter loud cries at the approach of an enemy, accompanying their screams by most significant actions. Naumann tells us that the male bird concerns himself more about the eggs, while the female gives her affection principally to the nestlings. We ourselves have not observed this difference. With respect to the tenderness shown to their offspring, this species differs much from other Finches, for if young Linnets, for instance, are taken out of the nest and placed in a cage, one may rest assured that the parents will continue to feed them, whilst Chaffinches, on the contrary, would allow their young to starve, as many of their admirers have learned by bitter experience. Exceptions to this rule are sometimes found, but among the last-mentioned birds care for their own safety is generally stronger than parental love. The Chaffinch is a cheerful little creature, and passes the greater part of the day in action, only reposing from its fatigues during the noontide heat. Its movements are much more agile than those of the Bullfinch, and of an entirely different character. On the branches it sits perched bolt upright, and seems to balance its body as it moves upon the ground, with a kind of step that is half hopping, half running. When on the twigs it prefers progressing in a sidelong direction, and flies very rapidly with an undulating sort of course, spreading its wings slightly before perching. The call-note of "pink" or "finch" is uttered with great diversity of sound and expression, and its song possesses a variety and beauty that has earned the admiration of all who have heard it. To the uninitiated the changes in these sounds are scarcely noticeable, but those who rear and study these birds have arrived at so great perfection in their observations that they can give the proper interpretation to their various notes. Lenz even tells us of nineteen (so-called) different expressions, but to enumerate them would be to weary our readers. In former times the passion for these birds was so strong that men have been known to exchange a *cow* for a Chaffinch, and though, at the present day, this mania has diminished in force, it has by no means died out. In Belgium we hear of bets being laid about the singing of pet birds. On the occasion of such trials of skill, the competitors in their cages are placed in rows upon the table, and the conflict continues for an hour. Certain men undertake to mark down how often each individual utters its notes, and the one that "trills" the oftenest is considered to have gained the prize. Instances have been known of Finches uttering the required sound 700 times within the hour. Chaffinches are well fitted for life in a cage; but there is a strange idea afloat that they must be blinded before they will sing well, and in many parts of Belgium this horrible practice is constantly carried out; many are captured, particularly in the breeding season, at which time they often recklessly expose their lives and liberty; all that is needful is to place a decoy in a snare, and its brethren will hasten in numbers to the trap, their angry little passions hurrying them to their destruction, for when the decoy is properly posted, the wild birds come down for the express purpose of engaging it in a fight, and thus rendering themselves an easy prey, are caught by means of limed twigs. Chaffinches are never injurious, and often very useful to man, as they destroy a great quantity of seeds—chiefly those of various weeds—whilst the numbers of insects consumed by their little bills render them real benefactors to the woods and gardens.

THE MOUNTAIN FINCH.

The Mountain Finch (*Fringilla montifringilla*) is a species known by a great variety of names. Its length is about six and a half to seven inches, its breadth ten and a half to eleven inches. The plumage of the male bird during the breeding season is of a brilliant deep black, and on the fore part of the neck and shoulders of an orange colour; the under parts of the body and breast are white, the sides black; in the female bird the latter are marked with long pale black streaks, while over the wings run two white lines; the under wing-covers are brimstone yellow. The female is brownish-black upon the head, neck, and back; the under parts of the body are of a sober, dull shade. After the moulting season the beautiful bright hues of these birds are hidden by the light yellowish-brown edges of the feathers. Countries beyond 65° north latitude may be considered as the homes of the Mountain Finch, it being by no means rare in Lapland, and very numerous in Finland; how far east it may be found we are at present ignorant. From these northern regions it emerges during the winter, covering the whole of Europe as far as Greece and Spain, and Asia even to the Himalaya Mountains, forming large flocks during the month of August, and then coming gradually farther and farther south. It reaches Germany in September, and Spain somewhat later, the latter country, indeed, being never visited so regularly as Germany. Mountains and large close forests are the favourite resorts of these birds, and decide their course, always supposing that their intended route is not disturbed by meeting with flocks of other kinds of finches, to whom they are very ready to unite themselves—indeed, the Mountain Finch is generally seen in company with Chaffinches, Linnets, Yellowhammers, Field Sparrows, and Goldfinches, a group of trees being usually chosen as the gathering-place of this very varied company, and the nearest wood affording them their sleeping quarters. Should a heavy fall of snow occur, they are compelled to remove to another place in search of food; their migrations are, therefore, dependent upon the suitability of the spot, and in nowise regular or premeditated. The Mountain Finch very much resembles the Chaffinch, and like it, is quarrelsome and violent, in spite of its apparently social disposition, equalling the bird we have just mentioned in its activity, but far inferior in the quality of its song, which, indeed, we can only describe as a plaintive little chirp.

The Mountain Finch is usually, but unjustly, considered to be stupid, because, like most other northern birds, it exhibits boldness and confidence when it first reaches us, it however soon loses these qualities and becomes cunning and shy. Though much to be admired on account of the beauty of its plumage, its many disagreeable qualities, and quavering, weak voice, prevent it from being regarded as suitable for domestication. The food of this species consists principally of seeds from various plants and trees; in summer they devour great quantities of flies and insects, and can live for many years upon rapeseed, and other simple diet. The nest and eggs bear a most deceptive resemblance to those of the Chaffinch. The Mountain Finch is sought for on account of its well-flavoured though somewhat bitter flesh, and is caught in great numbers.

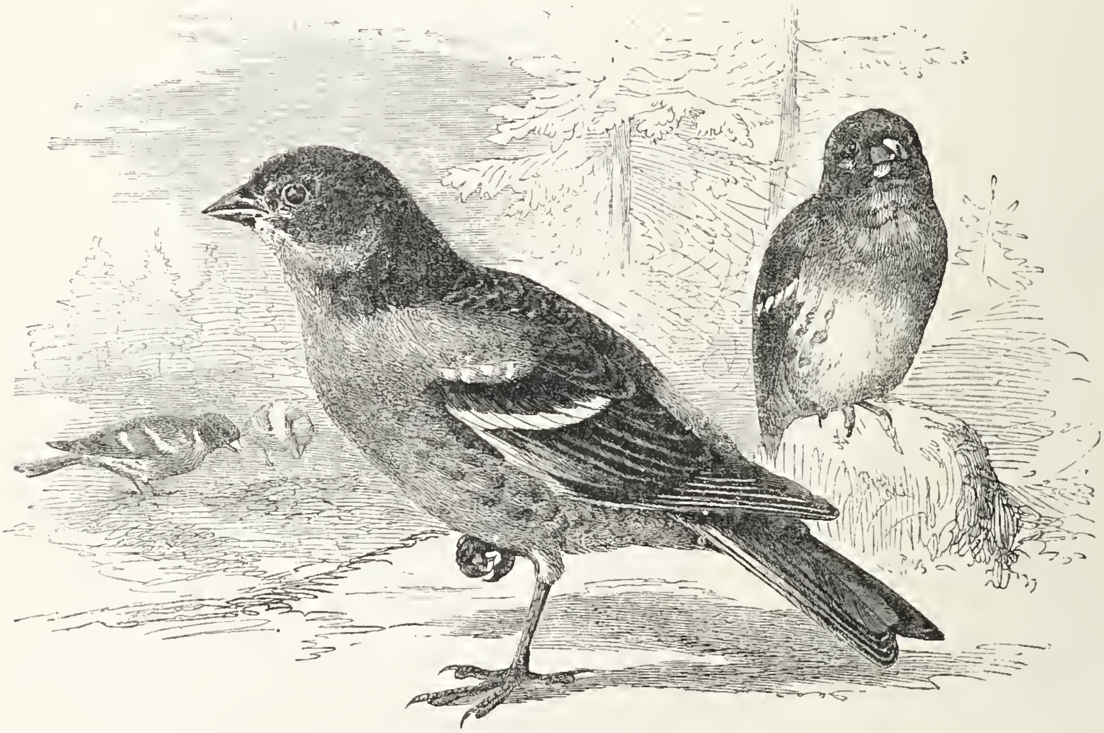
THE SNOW FINCH.

The SNOW FINCH or STONE FINCH (*Montifringilla nivalis*) is nearly allied to the Finches before described, but differs from the preceding species in the shape of the long, curved, and spur-like nail upon the hinder toe, its long wings, and the fact that both male and female have the same coloured plumage. We shall therefore consider it as the type of a distinct group. The length of this species is eight and three-quarter inches, and its breadth across the wings fourteen inches. The plumage is simple but very beautifully marked. In the old birds the head and neck are of a blueish ash-grey, the mantle brown, the upper wing-covers half black, half white; the under part of the body of a whitish shade; the throat black or blackish. After moulting, the original colours of the plumage are concealed by the light borders of the feathers. The tail is white, with the exception of the upper cover and its two middle feathers, these being white tipped with black. The beak is black in summer and yellow in winter; the feet are black, and the eyes brown. The young birds are grey; the throat is of a dirty white; and the feathers that form the white markings on the wings, are streaked with black, and have black shafts. Among European birds are two distinct species of Stone Finches, the first of which belongs to the more northern countries, the other is found in great numbers in most of the Tyrolean and Swiss Alps. Both pass the summer months in mountain ranges, preferring such wild and barren places as lie close to the boundaries of eternal snow and ice in these deserted regions, always mounting higher and higher, as the warm rays of the sun remove the snowy mantle from the naked rocks. In cold seasons they remain lower down, but never leave the vicinity of the glaciers, where they may be seen generally in pairs or small parties, perching upon such bare and rugged peaks as rear their crests nearest to the sky, and over which they fly in joyous confusion, or hop about the ground like the Chaffinches. During especially severe winters they may be met in the valleys, searching for the various seeds of which their food consists, and even there always seem to prefer the highest ground. Tschudi tells us that upon one occasion, a whole cloud of Snow Finches, numbering upwards of a thousand, was seen by a hunter in the open country near Kleven, of which he succeeded in killing some hundreds; the poor birds appearing to be so hungry and stupefied, that when he fired, such as had not been reached by his shot fell to the ground in company with their wounded fellows. Most observers tell us that they are harmless and confiding, and may often be found flying in and out of the huts of the mountaineers, who take great pleasure in watching and feeding them; they are, however, very timid, and will take every precaution to prevent the discovery of their nests.

The song of the Snow Finch is a short, disjointed, piping note, or a call resembling that of the Cross-bill; when frightened it utters a kind of chirp: its voice is principally heard during the period of incubation. The breeding season commences in April or the beginning of May. This bird builds by preference in deep clefts of perpendicular rocks, though occasionally it will occupy holes in walls or the roofs of houses, whether the latter are inhabited or not. The nest is capacious and substantially constructed of fine grasses lined with wool, horse-hair, or feathers. The young are tended by both parents with great affection, and fed principally upon the larvæ of insects, spiders, and little worms. When the nest is situated in a deep cleft, the young are assisted in climbing out of it by the old birds, in order that they also may revel in the beds of snow. These Finches are constant guests at various Alpine hospices for travellers, and meet with every attention from the monks who inhabit them.

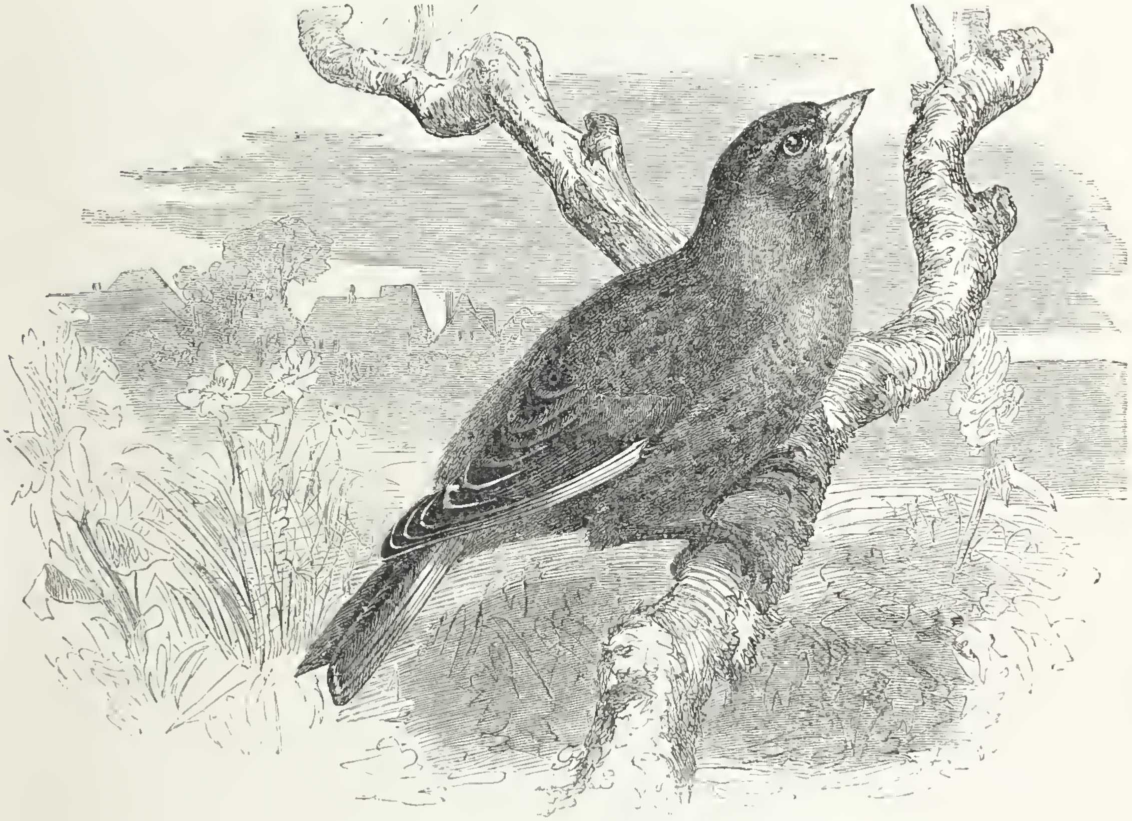
THE WINTER FINCH.

The WINTER FINCH (*Nyphæa hyemalis*) has been described as a species of Bunting, with the beak of a finch and very indistinct markings on its plumage. Its body is powerful, its neck short, the head large, the beak short and very pointed, the legs slender, and the feet of moderate length. The wings are short, but concave and rounded, the third and fourth quills being the longest; the second nearly the same length, and the first shortest of all. The tail is long and forked, the plumage very soft and lax. In the male bird the head, neck, back, wings, tail, and front of the breast are blackish grey, which is darkest upon the head; the wings are bordered with white, the two outermost tail feathers, the lower part of the breast and belly being also white. The beak is reddish white, and dark at the tip; the eyes are blackish brown. The female is paler than her mate, and marked upon the back with brown. The length of the male bird is five inches and three-quarters, its breadth nearly seven inches; the female is five and a half inches in length, and eight and a quarter across.



THE MOUNTAIN FINCH (*Fringilla montifringilla*).

This species, which belongs to North America, may be considered the best-known member of its family. "I have travelled," says Wilson, "over the country from North Maine to Georgia, a distance of 1,800 miles, but I do not think there was a day, or indeed an hour, in which I did not see a flock of these birds, often numbering thousands; and several travellers with whom I conversed gave me similar accounts of their experience." On the other hand, we are told by many American naturalists that the Winter Finch, as its name would show, is only to be met with in these numbers during the winter, and is not seen in the United States during the summer months. It is an inhabitant of the northern mountains of America, where it builds its nest, and from thence it wanders south when winter closes in. This species will occasionally migrate as far as Europe; and Temminck assures us that several have been captured in Iceland; indeed, it is upon this authority that we reckon them amongst European birds. Winter Finches are seen in the United States about October, departing about the end of April, and migrating by night; hosts of them are often found early in the morning in localities where not one was to be seen the evening before. On first arriving they fly about the outskirts of the woods and hedges in parties of from twenty to thirty, but at a later period assemble in flocks of some thousands. As long as the ground is uncovered, they feed upon grass-seed, berries, and insects, and are often to be found in company with partridges, wild turkeys, and even squirrels; but as soon as the snow begins to fall, Winter Finches make their appearance in the farm-yards, open roads, and streets of the town, and place themselves under the protection of man, who shows how much he is to be trusted by capturing hundreds of these diminutive creatures. Still this bird has more friends than enemies, and many Americans regard it with the same affection that we feel for our robin redbreast, and will feed it in a similar manner. Its confidence in man is so great, that it will allow a horseman or foot passenger to approach quite close to it in the street, only flying away if it has reason to think it will be molested. Thus it lives until the winter is passed, when it quits the towns and villages for its favourite mountain or native haunts. The Winter Finch but seldom joins company with any other birds, though in the villages and farmyards it will associate with the so-called "Song Sparrow" and domestic fowls, keeping, however, somewhat apart. It passes the night either perched upon a tree, or in a hole, and often makes a place for itself in stacks of corn. In its movements the Winter Finch much resembles our sparrows, and hops very lightly over the ground, testifying great readiness to engage any of its kind in single combat. As soon as these birds return to their native places the work of incubation commences, and the males are constantly engaged in furious contentions, chasing each other through the trees with wings and tail outspread, and thus exhibiting their plumage in all its varied beauty. At such times their simple but pleasing song is at the best, its principal feature being a few long, drawn-out notes, that are not unlike the twitter of a young canary.



THE BROWN LINNET (*Cannabina linota*).

When about to build, the little pair seek a quiet spot in which to make their nest, preferring a rock thickly covered with bushes; and there upon the ground they construct their home, forming it of twigs and grass, and lining the interior most delicately with fine moss and horsehair. The four eggs of which a brood consists, are of a yellowish colour, thickly covered with reddish spots, and measure five-eighths of an inch across the broadest end. Both parents tend their young with great care, feeding them for some time after they leave the nest, and warning them of danger by a peculiar cry. The Sparrow Falcon (*Rhyncodon sparverius*) must be regarded as the most formidable of the many enemies of the Winter Finches. Wilson mentions having seen this bird continually hovering in their neighbourhood, watching for a favourable opportunity, and, when the proper moment arrived, the destroyer would swoop down upon its victim, seize it, and carry it to the nearest tree to be devoured. The weasel, and many of the smaller kinds of beasts of prey, are also numbered among their foes.

The LINNETS (*Cannabinæ*) have lately been formed into a distinct tribe, on account of their conical-shaped bill, which is more rounded, shorter, and sharper at its extremity than in the true Finches. The wings are elongated, slender, and pointed, and the tail forked at the end. The representatives of this family are met with only in the northern parts of the Old World.

THE BROWN LINNET.

The BROWN LINNET (*Cannabina linota*) is five inches long and eight and a half inches broad across the wings. The colour of the feathers is very variable, according to sex, age, and season of the year. During the spring the adult male is most beautiful. The front of its head is bright blood-red, the back of the head, neck, and sides of the throat are grey, the back rust-brown, the rump whitish, the face and part of the neck a whitish grey-brown, the breast a blazing blood-red; the remainder of the lower part of the body white, and the sides a light brown. During the autumn the beautiful red tints of its plumage are concealed under the light borders of the feathers; but as these wear off the creature regains its brilliancy of hue. In the female the head and neck are brown, or of a deep yellowish ash-grey, the feathers spotted upon the shafts. The mantle is rust-brown, the feathers of the back having a light edge, and a dark streak along the shaft. The upper part of the breast and sides are light yellowish brown, thickly marked with blackish brown along the body. The young resemble the mother, but have more conspicuous spots upon their somewhat paler plumage. In such birds as are captured when young, the feathers never acquire their beautiful red colour, and old ones, when in confinement, soon change their brilliant hues for a pale yellow or yellowish red.

The Brown Linnet inhabits the whole of Europe, a large portion of Northern Asia, Asia Minor, and Syria, and during its migrations appears regularly in North-western Africa, though rarely seen in the north-eastern part of that continent: in Germany it is exceedingly common, particularly in hilly districts; but it avoids high mountains and extensive forests. These birds are of a social and cheerful disposition, preferring society even during the breeding season; they assemble as autumn approaches in companies of about a hundred, and during the winter associate with various other species. They fly to and fro over the country notwithstanding their parental duties; indeed, we observed a Brown Linnet early in the summer in our garden, at a distance of nearly a mile from its nest; and, strange to say, in these excursions the female frequently accompanies her mate. The affectionate tenderness shown by these little creatures towards each other is very striking. Should one of the pair be shot, the other will at once come to the ground, uttering most piteous cries, as though it could not endure the loss of its beloved companion; the same attachment is exhibited to the eggs and nestlings; so that the parents frequently allow themselves to be captured rather than be separated from their young. The flight of the Brown Linnet is light, rapid, and hovering; when about to descend, the bird wheels around in circles, and often almost touches the earth whilst on the wing, then rises again into the air, and continues its flight for some distance before settling. It hops nimbly over the ground, and, when singing in the trees, is usually perched upon the topmost branch, or on a projecting twig. Its voice may be heard from March to August, and the young sing from the time of their moulting in the autumn all through the bright winter days of November and December. The young male easily learns to imitate the notes of other birds, but forgets them after a few repetitions. We have heard a Brown Linnet that could perfectly imitate the song of the Chaffinch, and another that exactly copied the notes of the Siskin. Naumann mentions instances of its having even learnt the song of the Goldfinch, Lark, and Nightingale. This species begins its preparation for building, early in April, and breeds two or three times within the year. Its favourite nesting-place is among short brushwood, at no great distance from the ground. The nest is built externally of twigs, fibrous roots, and blades of grass, within which is a second layer more carefully constructed, but composed of the same materials, and this again is lined with wool and a little horse-hair. The brood consists of from four to five eggs of a whitish-blue colour, marked with a few reddish spots; the female sits for thirteen days, after which time the young are most assiduously tended by both parents until they leave the nest, the last brood always remaining under supervision for a longer period than their predecessors. Whilst the female is sitting she is cheered by the song of the male, who usually perches on a neighbouring tree. Unlike the Chaffinches, these birds live peaceably together during the breeding season, the males often taking little excursions in company, or they will perch and sing together, not out of rivalry but in harmony with each other. The following account is given of the proceedings of a pair of these little songsters that had made their home close to a house:—"The nestlings who, when discovered, had just left the shell, remained perfectly quiet in their snug abode, even when expecting or receiving their food, but were no sooner fledged than they at once began to try the power of their wings, continuing these efforts during an entire evening with so much success, that before break of day they had finally left the nest. They remained for some time close at hand upon the thickly-foliaged trees, and then, accompanied by their parents, quitted the spot. These birds were a source of great pleasure to us, as, contrary to the usual habits of the species, they did not leave off feeding when we approached, even if accompanied by several people. The time that elapsed between the different meals given to the young was not more than twelve or sixteen minutes; when feeding them the parents would perch upon a tree close at hand, gently utter their call-note, and then flutter towards the nest, which was always approached from the same side. Each young bird was fed in turn, the male commencing operations; when both he and his mate had emptied their crops into the gaping beaks of their progeny, they flew away to obtain a fresh supply. The female but once came back alone, and only on that occasion did she take the precedence of her mate in feeding the brood. Every morning before leaving the nest the mother carefully arranged and cleaned her little domicile, and instead of throwing out what she cleared away, swallowed it, and spit it out again at some distance from the nest. We never observed the male bird assist in this business except once, and have no doubt that the precaution exercised by the mother was intended to prevent any trace of her brood from being discovered." The Brown Linnets but seldom leave their progeny, and will continue to feed them long after they have been placed in a cage. Bird-fanciers often take advantage of this, and we have never known a case in which the parents under such circumstances have neglected to provide for the wants of their offspring, so that the old birds may frequently be enticed farther and farther from their breeding place by the gradual removal of the cage to a distance. This manner of feeding the young has, however, its disadvantages, as they remain wild and shy for a much longer period than if brought up by hand.

THE MOUNTAIN OR GREY LINNET.

The Mountain or Grey Linnet (*Cannabina montium*) in many northern countries seems to take the place of the species just described. Its length is four and three-quarter inches, and the span of its wings eight and a quarter inches. The plumage on the back is of a blackish brown, the feathers being edged with rust colour, the rump is red, the breast of a rusty yellowish grey striped with brown, and the remainder of the lower part of the body white. This bird is always to be met with in the northern parts of Scotland, also in Norway, Lapland, Russia, and Siberia; it inhabits mountain regions where stunted shrubs and low Alpine plants sprout from between the rocks. In its habits it resembles its congeners, but is perhaps of a somewhat livelier and more cautious disposition. Its voice reminds us of the notes of the Siskin and Red Linnet, and though its song can scarcely be called beautiful, it has something so spirited and cheerful in its tones that the inhabitants of such northern countries as are not much frequented by Finches take great pleasure in listening to its strains. In captivity the habits of the Grey Linnet are the same as those of others of its race, and it soon becomes accustomed to a cage. The food of this little chorister consists of seeds. The Mountain Linnet is frequently found in the southern parts of Sweden; it is said to be rare in Scotland though common in England, and is frequently caught in the vicinity of London. Solitary birds of this species are often met with in Germany; and during very severe winters they will even wander as far as Southern Switzerland, Northern Italy, or the south of France.

Many small Finches, distinguished for their long and slender beaks, were formerly classed under the general name of Siskins, but have lately been arranged in separate groups with more or less reference to the colour of their plumage.

THE BIRCH-TREE SISKIN.

The Birch-tree Siskin (*Linaria rubra*) is extremely common in Central Europe; by some authors it has been described as the Red Linnet, nevertheless it is so entirely unlike the Linnet, that only a novice in ornithology could mistake them, even at the first glance. The adult male of this species is a beautiful bird, as will be evident from the following description:—The front of the head is of a dark carmine-red, the rump pale red, and the feathers on the upper part of the body brown with light edges; the wing and tail feathers are black bordered with grey, and the wing exhibits two bands of a lighter shade than the remainder of its surface. The under part of the body is entirely white, the throat black, the fore part of the neck, upper breast, and sides, of a pale carmine-red, this last colour being entirely wanting, or very indistinct in the female. Shortly after moulting, the beauty of the plumage much deteriorates, as the feathers then become edged with grey. The young birds resemble the mother, and, when nestlings, are of a uniform brownish grey with brownish markings along the body; the head is blueish, the lower mandible yellow, the feet greyish brown, and the eye dark brown. The Birch Siskin is of nearly the same dimensions as the Linnet, being about five inches long and eight and a half inches across the wings; the female is in a very trifling degree smaller than her mate, and both birds differ from other Finches in the unusual elongation of the beak, which is somewhat conical and compressed at the sides, and by their comparatively strongly-developed wings.

Those of us who have been favoured with a peep into the extensive northern forests can understand why it is that the Birch Siskins are so rarely seen during the winter in Central Europe; they seldom need to migrate, the birch-trees of those words producing in great abundance all that they require; it is only when their usual supply of seeds and fruits fails that these birds decide on

SISKIN, BULLFINCH, AND GOLDFINCH.

removing for a time to more southern regions. Our readers will readily believe that this necessity is of very unfrequent occurrence, when we tell them that in cold northerly countries hundreds and thousands of square miles are entirely covered with trees, yielding the seeds preferred by these children of the forest. In short, the Birch-tree Siskin occupies the same position with regard to birch woods as does the Cross-bill to the tracts of fir and pine-trees, finding in them abundance of food during the winter months, and plenty of insects during their breeding season; indeed, the swarms of flies met with in these regions are prodigious, every tree or bush being often literally enveloped in a cloud of them. We have frequently been told that these birds will breed in Germany, but as yet no nests have to our knowledge been discovered so far from their usual haunts. Even in the north it is extremely difficult to find them, and for the first description of one we have to thank Boja, whose statements have been corroborated by Schräder. "You know," says the former writer, in a letter to his brother, "what difficulty I have had in my search after a Siskin's nest, and I should never have found it had not accident placed it in my possession. As I was descending a steep and almost naked precipice near Norwick my foot slipped, and I fell heavily into a cleft of the rock, disturbing by my fall a female bird sitting upon her nest, which was fixed upon the strong branch of a birch-tree, and contained four eggs, not larger than those of our Goldfinch, and of a greenish-white colour, marked with brownish red."

The Birch Siskins usually make their appearance in Germany about the beginning of November, and that in very considerable numbers, though, as we observed above, their coming is by no means regular, and only takes place when they are driven from their native haunts by want of food. They usually select districts planted with alder or birch-trees, from whence they fly over hill and dale in company with Greenfinches, often passing the night upon the hedges, and feeding upon all kinds of oily seeds gleaned from the fields, but preferring those of the birch and alder. It is very evident when these birds first arrive in that country that they are by no means aware of their danger in venturing so near their arch-enemy man, but will come down and seek their food close to his dwellings, indeed it is only after repeated proofs of his treachery that they begin to lose their confidence and grow cautious and shy.

The Birch Siskin is a restless, lively little creature, and more skilful in climbing than any of its congeners; indeed, it will bear comparison in that respect with the Cross-bill or Titmouse. Trees, when covered with these birds, present a most beautiful appearance, as the latter hang upon the branches or climb in busy crowds to reach the seeds; they are also quite at home upon the ground, to which they descend and hop about much more frequently than any other members of the family. Their flight is rapid and undulating, they usually hover for a time before perching, and but rarely frequent high trees, except when compelled by necessity to rest upon them in passing over extensive and open districts. The flocks when once united never separate, and such as stray from the main body are recalled by their little companions with anxious cries. Quarrelling or strife are unknown among them, they even associate as peaceably with Linnets and Field Sparrows as they do with their own species. Birch Siskins are excellently suited for a cage for they soon become very tame, and seem to rejoice in displaying their activity and skill in climbing. They are readily caught by the assistance of a decoy and a few limed twigs; numbers are thus captured, as the poor little prisoners are often followed by others of their kind who will not desert them in their affliction. Their flesh is frequently eaten, and their song is simple but melodious. It remains as yet to be decided whether the American Birch Siskin is the same species as that inhabiting Europe. Richardson observed it during very severe winters in all the fur districts, and Audubon speaks with delight of the tameness and confidence in man exhibited by those he met with in Labrador.

The TRUE SISKINS have recently been separated from the species just described, by reason of their long and delicately-pointed beak, the ridge of which is somewhat arched. They are also distinguished by their short claws and comparatively long wings, and by the colour of their plumage, but except in these respects the birds strongly resemble each other.

THE COMMON SISKIN.

The COMMON SISKIN (*Spinus viridis*) is about five inches long, and nine across the span of the wings. In the male the top of the head is black, the back yellowish green, streaked with blackish grey; the wings, which are blackish, have two yellow stripes. The under part of the body is bright yellow upon the breast, and white upon the belly; the throat is black. The female bird is greyish green upon the upper parts of the body, streaked with a darker shade; the under parts are white or yellowish white, and marked with longish black spots. The young are yellower and more variegated in their markings than the female.

The Siskin is particularly numerous in mountain regions, chiefly inhabiting the interior of Norway, Sweden, and Russia. It is unknown in Northern Asia, but is occasionally met with in the north-eastern portions of that continent; Radde mentions flocks of these birds seen by him in the Bareja Mountains, and near the banks of the Amur. The Siskins are birds of passage, and, except in the breeding season, spend their time in wandering over the country, going south for the winter in great numbers, should the season be unusually cold or food deficient. In the summer months they frequent the pine forests of mountainous districts, living upon the seeds that are found there in abundance. In these places they also breed. During their migratory excursions they often appear in winter by thousands close to the villages, in districts where, in less inclement seasons, not one is to be seen. In these wanderings, barren tracts of country are carefully avoided, and they prefer perching upon the topmost branches of forest trees. "The Siskin," says Naumann "is always lively, adroit, and bold, and very attentive to the care of its plumage; it is brisk in its movements, and a most capital climber." In this respect it much resembles the Titmouse, frequently hanging backwards from the boughs, which it ascends quickly, even should they be quite perpendicular—in short, among the branches it is never quiet, except when asleep or while taking its food. It can also hop nimbly upon the ground, always, however, appearing to avoid descending from its perch, if not obliged to do so. Its flight is undulating, rapid, and light; it can pass with ease over large tracts of country, and rise to a considerable height in the air. Its song is a very simple, but not unpleasing, twitter. In all other respects this species strongly resembles the Birch-tree Siskin; in disposition it is social, peaceful, and thoughtless—indeed, we do not know any bird that shows so little regret at the loss of its freedom, or is more suitable for domestication. Moreover, it is very docile, and learns many little tricks, is not at all dainty concerning the quality of its food, and becomes so tame that it may be allowed to leave its cage at pleasure, and will obey its master's call. Hoffmann relates of several of these birds that were kept in his aviary, that they could be allowed to fly about, and would readily take their food from his hand. On one occasion, as he tells us, a flock of wild Siskins passed over the garden while one of his captive birds sat perched upon his hand. The tame bird had no sooner heard the call-notes of its brethren than it responded to the invitation, and flew at once to join the party upon a neighbouring tree, receiving a very warm reception from the little strangers, both individually and collectively. Of course he gave his pet Siskin up as lost, but made an effort to allure it back by its call-note and some favourite food. These efforts were successful, and the truant was again soon perched upon his hand, although it was followed by one of the wild birds to within six feet of the place where he stood.

Seeds of many kinds—but principally those of trees—young buds, tender leaves, and, during the breeding season, caterpillars and various insects, constitute the ordinary food of these birds, the nestlings being fed exclusively upon the latter diet—caterpillars, aphides, &c. It is for this reason that the parent birds often frequent gardens and orchards, accompanied by their young, such localities affording a larger supply of insects than is to be met with in the forests. When in captivity a little seed and a few green weeds will satisfy all their requirements.

GOLDFINCHES AND NEST.

The Siskin seeks its mate in April, obtaining her favour by very much the same efforts as those practised by the Cross-bills, the male bird, at such times, looking much larger than it really is, spreading its wings, and wheeling around her at a considerable height in the air, and at the same time singing vigorously. During this courtship the female remains quite quiet, only from time to time caressing her companion with her beak, or making short excursions in his company. Occasionally many of these little couples will join company, and live in the utmost peace and unity. The building of the nests begins shortly after the pairing of the birds. and all must admire the cunning with which the female selects a suitable spot, and fully appreciate the popular idea that a Siskin's nest is invisible. The locality fixed upon is generally the extreme end of a thick, lofty branch, the foliage of which entirely conceals the little domicile. Fir and pine-trees are frequently selected for nidification, and so perfectly does the exterior of the nest resemble the branch upon which it is placed, that it is only recognisable when seen from above, in which position it is betrayed by its rounded interior—indeed, so completely is it hidden from observation, that a servant sent by us into a tree to discover the nest, was about to descend without it, even though it lay but two feet distant from him; and had we not recommended him to strip the branch by removing one twig after another, he probably would have sought for it in vain. This plan, however, succeeded, and the prize was secured. The skill with which these little creatures conceal their young has prevented any one from having seen the nest in progress of erection, and will account for the old-fashioned legend that the Siskin builds with invisible stones—for so very great is the difficulty of distinguishing these structures from the surrounding branches, that few naturalists have succeeded in finding them. The progress of the work is extremely rapid. The two birds that we saw laboured alternately, each waiting while the other supplied fresh materials, and then flew together in search of what more was required, bringing back beakfuls of dry twigs, wool, or moss, which they tore from the bark of the trees. It was curious to see the little creatures prepare the wool, with which the nest is lined, by holding it with the foot while pulling it out with their beak to render it soft and elastic. In some other instances that have come under our notice, the female alone constructed the nest, the male keeping near her during the whole time. When busy in the preparation of their dwelling, these little birds testify no uneasiness if watched or approached, though they have been known to leave a partially constructed nest, and commence another. The vicinity of water is always preferred in the choice of a tree on which to build. The nests vary considerably in their appearance. They are formed of twigs and moss, bound strongly together with cobwebs, and lined with feathers, hair, and various kinds of delicate fibres. The walls are very thick, and the central cavity deep. The breeding season usually commences about the beginning of June, but young fledged birds have been seen as early as May. The eggs, which resemble those of the Brown Linnet, differ remarkably from each other in size, shape, and colour, but are, for the most part, of a whitish-blue or blueish-green, marked with a variety of spots and veins. The female alone sits upon the eggs, remaining on the nest from the time that the first is laid. The Siskin has been known to breed in captivity.

THE GOLDFINCH.

The Goldfinch (*Carduelis elegans*) may be considered as the type of a group that has but few representatives, the only other species with which we are acquainted being an inhabitant of the West Indies. The Goldfinches are distinguished by their long, conical, compressed beak, bent slightly at the tip; short strong legs, tail of middle length, and variegated exterior. The feathers of both sexes are alike in their colouring, but the young bear no resemblance to the parents. The length of the male is about five inches, its breadth eight and three-quarter inches. The female is not quite so large. The tail measures two inches, and the wing two and a quarter inches from the shoulder to the tip. The plumage is most beautifully marked and ornamented (see Coloured Plate V.); the beak, which is flesh-coloured at the base and blue at the tip, is surrounded by a black circle, and this again is encompassed by a broader band of red. The back of the head and part of the otherwise white cheeks are black. The back is brown, the belly white; and the sides of the upper part of the breast light brown; the wings and tail black, streaked with white, and the quills golden yellow at the root. The two sexes are so much alike that it requires a practised eye to distinguish them, though the male has somewhat more red on the face and a deeper black upon the head than the female.

The Goldfinch inhabits a much larger extent of country than most others of its race, being found over the whole of Europe, in Madeira, the Canary Isles, North-western Africa, a large part of Asia, and even in Cuba. Districts rich in trees and plants are the favourite resorts of this bird, from whence it flies over the surrounding country in search of food, frequently visiting our fields and gardens, and enlivening us by its activity and beautiful song. When upon the ground, its movements are decidedly slow and awkward; but nothing can exceed its nimbleness in climbing, and it may often be seen hanging from a twig head downwards, for whole minutes at a time. Its flight, like that of its congeners, is light, rapid, and undulating; like them it hovers before perching. It generally prefers the highest branch, upon which it sits bolt upright, with plumage tightly compressed; but its restless disposition prevents it from remaining for any great length of time upon one spot. It is remarkably shy and peaceable in disposition, living upon excellent terms with its feathered brethren, but preferring the society of the Titmouse. The song of the male is loud and pleasing, and his voice may be heard throughout the whole year, except during the moulting season. These birds subsist upon various kinds of seeds, principally those of the thistle tribe, so that wherever the latter are found we may look for the presence of these pretty songsters; indeed, a more pleasing sight can scarcely be imagined than that of a party of Goldfinches, as they hang head downwards from the thistle tops, and rob them of their seeds by the aid of their long and pointed beaks. In this business the harsh, strong feathers upon the head are of great service, as they shield that part from the prickly mass from which they pluck their food. During the summer, they destroy large quantities of insects—indeed, upon these they feed their young, thus rendering inestimable service to mankind. The nest is built upon a tree at about twenty or twenty-four feet from the ground, and is so carefully concealed at the end of the branch upon which it is placed, as to be quite imperceptible until the leaves fall. The female alone works at its construction, employing moss and fibrous roots for the outer wall, and weaving these materials together in the most artistic manner with spiders' webs; the interior is then lined with thistle-down, which is kept in its place by the aid of horsehair or bristles. The male bird sings with great vigour while the work progresses, but rarely assists his mate in her labours. The brood consists of four or five delicate, thin-shelled eggs, of a white or blueish-grey colour, lightly sprinkled with violet grey spots, which form a kind of wreath at the broad end. The eggs are generally laid about May, and the parent birds breed but once during the summer. The female sits upon the nest for thirteen or fourteen days, never leaving her brood for more than a few moments; her mate brings such food as she requires, and subsequently assists her to feed the young for some time after they are fully fledged. The capture of Goldfinches is attended with but little difficulty, and, though shy, they are easily tamed, and taught a variety of pleasing tricks. They will pair with Canaries when caged, and the progeny have the colours of both parents most curiously blended in their plumage. The food of these birds, when tamed, should consist of seeds and an abundance of green-stuff; but whilst nestlings, they must be fed upon bread soaked in water, until their beaks have acquired a little strength.

THE GOLDEN THISTLE-FINCH.

The Golden Thistle-finch (*Astragalinus tristis*), an inhabitant of the New World, is an elegant creature, of about four and a half inches long and eight broad. This bird resembles our Goldfinch in its appearance, the yellow plumage being varied by a black and white bordering to its wings and tail-feathers. The beak and feet are brownish yellow, and the eyes dark brown; the coat of the female is deeper in its hues than that of her mate, and has no black spot on the forehead; in other respects it so exactly resembles its European congener, as to require no further description, and Audubon tells us that their voices are so similar as to be scarcely distinguishable.

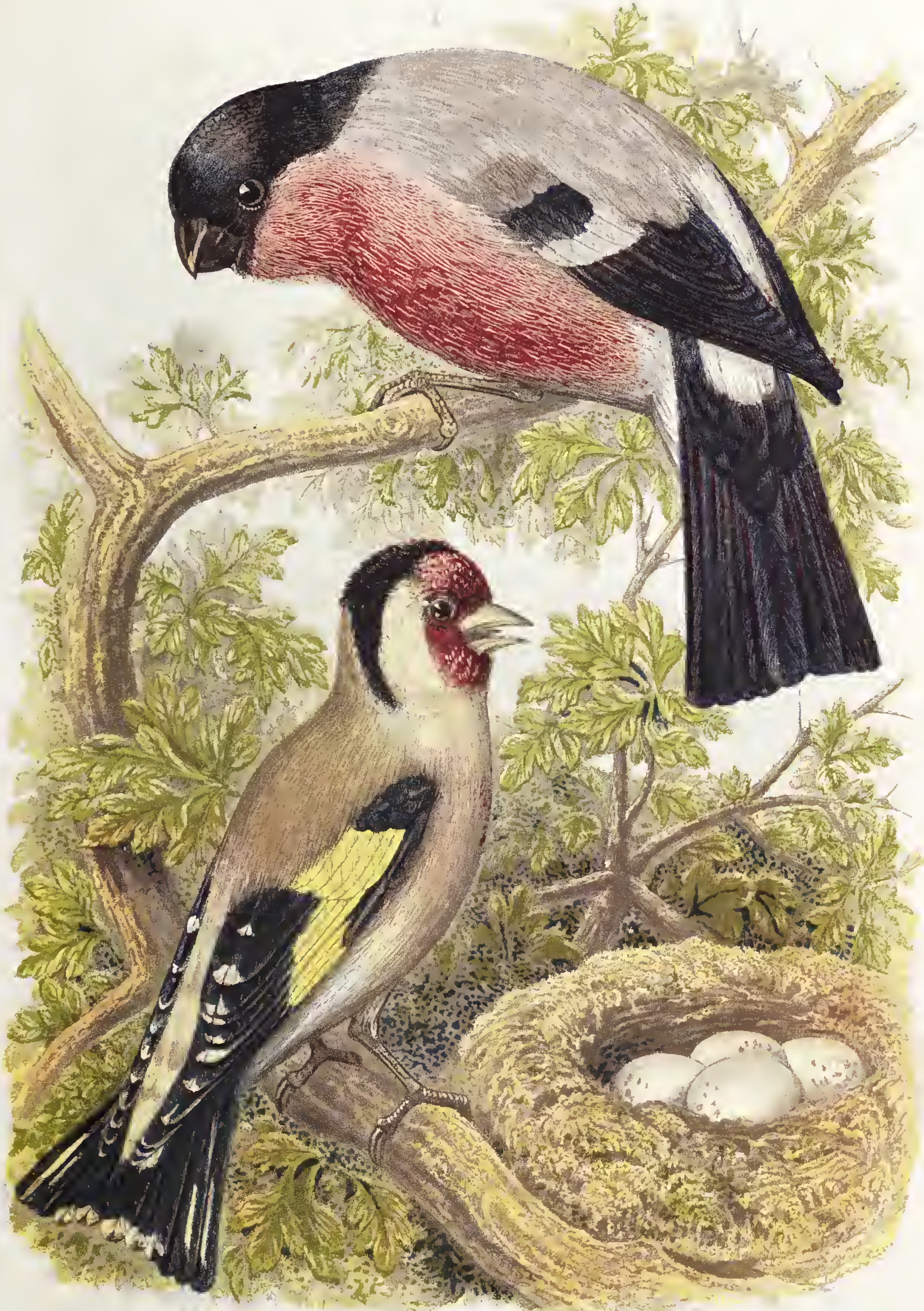


Plate 9, Cassell's Book of Birds

1. BULLFINCH —— Pyrrhula vulgaris

2. GOLDFINCH —— Carduelis elegans

THE SPARROWS PROPER (*Passeres*).

The Sparrows are known by their strong, thick, stunted beaks; short, stout legs, furnished with toes of moderate length and crooked claws; their wings are short, and the tail more or less graduated; the body is stoutly built, and the plumage simple in its colour and markings. The feathers of the male are of chestnut-brown, grey, or golden yellow, while those of the female are entirely grey, streaked with brown; the young are like the mother. The members of this family strongly resemble each other in their mode of life and habits; all or more or less stationary, frequenting agricultural districts, and any place inhabited by man; never going to a great distance from their dwelling-place, and passing their time principally upon the ground in search of food. The Sparrows show as great a dislike to barren districts, as to thick woods; preferring such spots as are planted with shrubs or hedges, upon which they seek shelter in times of danger; holes in rocks, or crevices in walls, are, in like manner, sometimes employed for this purpose. In their movements they are clumsy, and hop when upon the ground with apparent effort; their flight is violent, and far more rapid than accords with their strength, so that they are soon exhausted. Their song scarcely deserves the name, and the call-note is monotonous and unpleasing. These birds are intelligent and social in one sense of the word, but, although they love to congregate with other species, they are extremely quarrelsome and spiteful, especially during the season for choosing a mate, when most pertinacious and furious battles are of constant occurrence—the enraged combatants falling upon each other, biting, struggling, and screaming in a manner that is perfectly astounding to a spectator of this miniature warfare; indeed, it seems as if these encounters took place simply to gratify the pugnacious propensities of the irritable little creatures. All the members of this family bathe frequently, paddling about when in the water until their coats are quite saturated, and subsequently preen their feathers with the greatest care. Corn and insects form their principal food, their preference for the former, perhaps, accounting for the pertinacity with which they frequent the dwellings of men. During the summer they industriously pursue various kinds of insects, with which they feed their young. They are fond of fruit, and often attack our orchards, doing an incalculable amount of injury. It is believed that these birds produce many broods in the year. The nest, which is placed in a hole or upon the branch of a tree, consists only of a heap of scraps, thrown inartistically together without arrangement or care, except that the softest materials should line the interior.

Sparrows are totally unfitted for life in a cage.

THE COMMON SPARROW.

The Common or House Sparrow (*Passer domesticus*) is well known to all our readers. The mantle of the male bird is brown, striped with black, the top of the head blueish grey, edged at its sides with deep chestnut. The wings are marked with two bands, one white, the other of a rusty yellow colour, and extremely narrow; the cheeks are greyish white, the front of the neck black, and the under part of the body light grey. The female is of a light brownish grey upon the head, whilst over the eyes runs a pale yellow line; the back is light brown, streaked with black; the whole of the lower part of the body greyish white; the young resemble the mother until the first moulting season. The beak is black in summer and grey in winter, the feet horn-grey, and the eyes brown. Many varieties of plumage occasionally occur, some individuals being white, or yellowish white, and some nearly black. The male and female differ but little in size; both are about six or six and a quarter inches long, and nine to nine and a half across the wings.

The House Sparrows inhabit a greater extent of country than almost any other bird, being found

WINTER VISITORS TO THE VILLAGE.

over the whole of the northern portion of the Eastern hemisphere ; moreover, it is a remarkable fact that wherever met with they are always in a state of semi-domestication : even in Australia, into which country Sparrows were only introduced some few years ago, they hold the same relation to man as in Europe. Few villages are to be found in which these little creatures have not settled, and that in the fullest sense of the word, as they never fly more than a mile from the place where they were born, except when in search of a spot on which to establish themselves. We are told by a Norwegian naturalist that these birds are yearly seen flying about some parts of Norway in couples, going from house to house, but that, not finding the country to their liking, they soon disappear, leaving no trace behind. Our House Sparrow is social in its habits, and even during the breeding season can hardly be said to live apart from its fellows; the nests are placed very close together, the males appearing to enjoy each other's society even whilst the process of incubation is going on. The young join the rest of the troop as soon as they can fly. During the whole time that corn can be obtained, or any green plants remain, these flocks fly daily over the neighbouring fields and plains in search of food, returning in the middle of the day to the villages, where they rest, and in the evening assemble upon the trees or roofs to make their preparations for passing the night—a proceeding that is always accompanied by great confusion and much squabbling. In the winter time these intelligent little creatures prepare beds or nests of the warmest description, into which they creep for shelter from the cold; they also frequent chimneys, quite regardless of the smoke and soot with which they are often covered.

SPARROW'S NEST.

The Sparrow will attach itself to man, but never sufficiently so to overlook the precautions necessary for its safety; it is ever upon its guard, and when angry even its inflated plumage cannot conceal the glances of its bright and crafty little eye; the unexpected opening of a window, the approach of a stranger, or even a stick held up like a gun, will at once excite alarm and cause its instant flight. Unlike the Pigeon race, this bird seems to become more wary and cunning as its intimacy with man increases—indeed, it never seems to forget the lessons taught by experience. Despite the clumsiness of its shape, the Sparrow has an air indicative of considerable spirit, as it hops energetically over the ground with tail borne aloft and head erect. The social disposition of these birds in no way interferes with their natural inclination to pick a quarrel upon every opportunity, and the most ludicrous combats often take place between the males relative to the appropriation of a mate. On these occasions, when the battle rages furiously, males and females alike mingle in the strife, until both parties come pecking, tumbling, and screaming through the air, to conclude the fight upon some neighbouring roof, forgetful in their fury of the safety they usually prize so highly, and take such precautions to ensure. During these contests they carry the head and neck erect, the tail raised, and their wings somewhat drooping. The Sparrow seldom flies at any great height; if perched upon a steeple, or other similar elevation, it will drop rapidly towards the ground before commencing its flight, rising again in a direct line when it wishes to attain the same altitude as before, although this attempt at soaring appears to cost the bird a great effort; it prefers, however, living at some distance from the ground.

These birds are capable of enduring almost any degree of cold, and but few perish even during the most severe winters. The note of the Sparrow is extremely unpleasing; the young utter the same cry as the parents, and are very noisy while being fed. The female is exceedingly prolific, breeding sometimes thrice during the year. The nest, which is built early in the spring, is little more than a rude heap of straw, sticks, and paper, lined with feathers, and furnished with a kind of lid. Even this slight preparation for her brood is often avoided by the cunning female, who will creep into the nest of a Swallow, there to deposit her eggs; and should she find a brood still occupying it, will at once destroy the helpless young ones, throwing them over the side, to make room for her own offspring, quite regardless of the cries of the unhappy mother. It was once believed that the Swallow would avenge the injury thus inflicted, but this we regard as a fable. The first eggs—generally from five to seven in number—are laid in March; the shell is smooth and delicate, of a dull purplish white, very variously spotted with brown or dark grey. The parents sit by turns on the nest for about thirteen or fourteen days; they feed the young at first with soft insects, and afterwards with corn that has been softened in their crops, until the fledglings are strong enough to eat seeds and various kinds of fruit. A week after the first brood has left the nest preparations are commenced for another, the second batch of eggs being laid within a fortnight of the departure of the first family; and thus they go on producing brood after brood until the end of September. Both parents are much attached to their offspring, and should one of them die, the other will use every effort to supply the wants of the young birds. Selby gives us a remarkable example of their perseverance in this duty. He had observed that a pair of Sparrows continued to carry food until winter was close at hand, and being anxious to discover the reason of such an unusual occurrence, examined the nest, in which he found a young bird whose foot had become entangled, and was in this manner imprisoned, so that the parents, unable to release it, continued to minister to its wants.

Many persons are inclined to regard Sparrows as mischievous creatures, without considering the immense services they render by devouring innumerable noxious insects. Frederick the Great of Prussia, we are told, was so prejudiced against these birds that he issued a decree that they should be shot whenever they appeared, and set a price upon their heads. The poor Sparrows were immediately pursued in all directions, and some thousands of dollars expended in the course of a few days by the State as payment for their destruction. The natural result of this barbarism followed; the trees that had been supposed to be injured by the birds were so covered with caterpillars and other insects, as to be not only barren of fruit, but also quite denuded of their leaves, so that the King was at once obliged to recall his decree, and had to command that Sparrows should be brought from all parts in order to repair the mischief that he had done. These birds have been introduced into Australia in the hope of their being similarly useful. Their flesh is often eaten, and in Italy small towers are built, in the compartments of which they make their nests; from these the young are taken as soon as fledged, and are considered great dainties when spitted on a stick and roasted. In old Gesner's time they were applied to a very different purpose: two spoonfuls of burnt Sparrow was supposed to be a cure for avarice, and the flesh of the nestlings, when applied with a little vinegar, was considered an excellent remedy for toothache. According to Pliny, their brains were extensively employed in medicine.

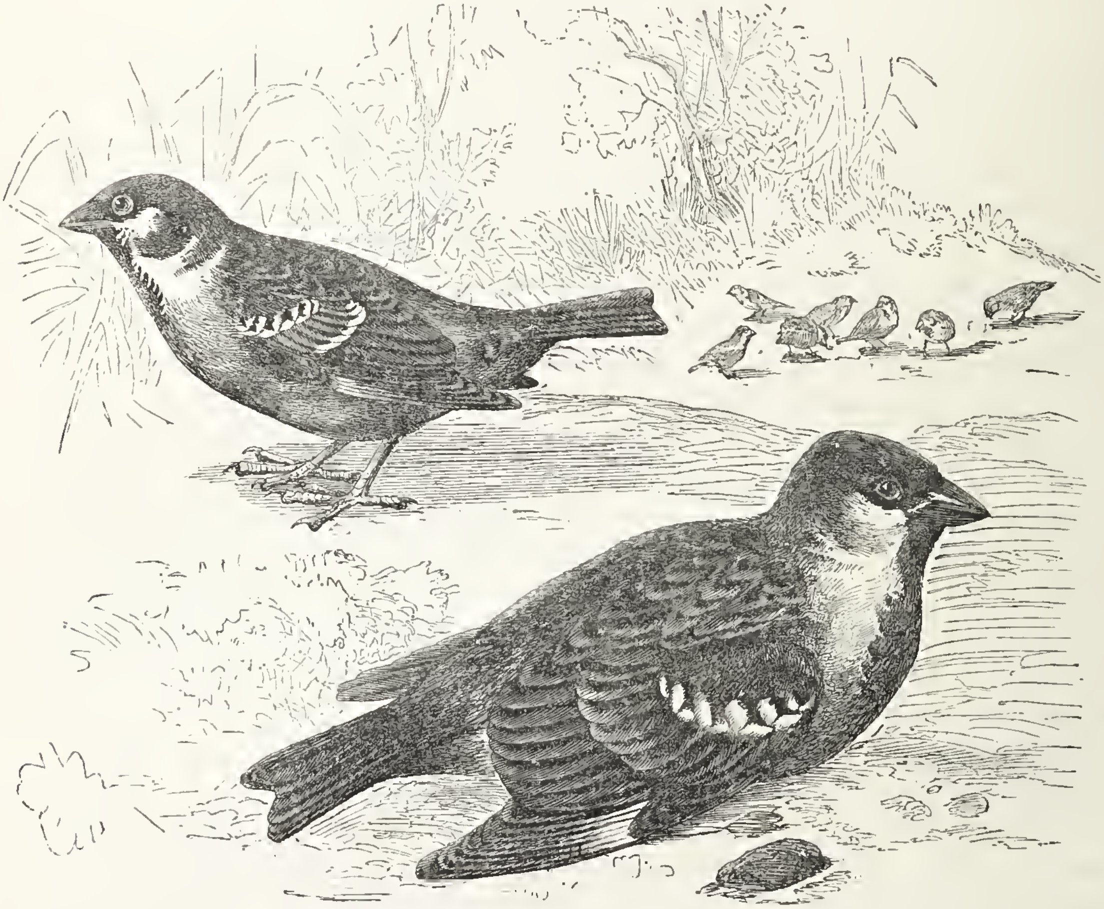
It is now satisfactorily decided that the Sparrows inhabiting Southern Europe are to be regarded as varieties of our *Passer domesticus*, and that the differences in their plumage are simply attributable to the diversity of external circumstances. The colours of the male alter considerably as it advances in age, or under any great change of climate; the reddish brown upon the head spreading towards the nape, while, on the contrary, the same beautiful tint upon the back becomes much more indistinct as the black shade at the lower part of the feathers extends and mingles with it. Thus the Sparrows of Provence and Italy, when no longer young, resemble ours in the colour of the back; but the head is generally entirely reddish brown or grey, the feathers being tipped with light brown only after the moulting season. These birds are very numerous in the warmer parts of Siberia, Buchara, Syria, Java, Egypt, and Nubia, and are also found in the islands of the Mediterranean, especially in Sardinia. The so-called Italian Sparrow (*Passer Italicus*) has been considered by some as constituting a distinct species. In the old males the top of the head and back of the neck are dark reddish brown, the sides of the neck and cheeks white, the gorge, throat, and upper part of the breast deep brownish black, and the sides reddish grey. The female is of a rusty white, mingled with grey on the under part of the body, and the markings above the eyes are much paler than in the Sparrow of Northern Europe. This bird is principally found in the South of France and Italy, but is quite unknown in the interior of Spain and Egypt. The *Passer Italicus* will often mate with our common House Sparrow—the plumage of the progeny being a curious mixture of that of both parents.

THE SPANISH SPARROW.

The Spanish Sparrow (*Passer Hispanicus*), or Marsh Sparrow (*Passer salicicolus*), is about six inches long, and its breadth across the span of its wings about nine inches and a half. The female is somewhat smaller than her mate, and in both birds the tail is generally longer and the tarsus shorter than in the Common Sparrow. In the colour of its plumage, however, the *Passer Hispanicus* bears but little resemblance to the House Sparrow; in the old males the head and back of the neck are of a dark reddish brown, the back is black, marked with chestnut, and the throat, breast, and sides are almost black, with a pure white streak passing above the eyes. The rest of the plumage is similar to that of the House Sparrow, and the females of both species are almost identical in appearance.

The Marsh Sparrow inhabits such districts as are abundantly watered, and is found in Spain, Greece, Northern Africa, and the Canary Islands, as also in some parts of Asia. It is eminently a field bird, and is seldom found near human habitations, preferring the vicinity of bogs or water, near which it is usually to be met with in large flocks. In Egypt these birds are more frequently to be seen than any other species. Bolle tells us that the date-palm is very attractive to them, and that for the sake of the shelter afforded by its crown of leaves, they will occasionally desert their favourite swamps—especially in Egypt, where they may be frequently seen near villages rich in these trees, whilst such as do not possess them are never visited. The same writer also mentions that on one occasion he saw a settlement of some hundreds living under the roof of a church. The flight of the Marsh Sparrows is very rapid, and, unlike the rest of their race, they keep quite close together when on the wing. In Egypt they may often be seen flying over fields of rice in such dense masses that numbers might be brought down at a shot. Their voice is considerably stronger, purer, and more varied than that of the Common Sparrow, and their disposition much more shy and timorous. The time of incubation in Egypt and the Canary Isles commences about February or March, and at this season the palm-trees of the Delta are covered with their nests, the holes in the stems being also employed as breeding-places. The nest itself is a very rude affair, and the eggs so closely resemble those of the Field Sparrow that the most practised eye cannot distinguish between them. By the month of May the young have left their home, and the parents at once set about making preparations for another brood. In no part of the world are these birds regarded with favour. In Egypt the damage done by them to the fields of rice is very serious, and Bolle gives us the following account explanatory of the aversion in which they are held by the inhabitants of the Canary Isles. The principal promenade of the capital, he tells us, is a most attractive, cheerful spot, encircled by banana trees, and prettily decorated with fountains and flowers; consequently, it is a favourite resort of the beauty and fashion of the place during the long summer evenings. Night after night elegant groups may be seen lounging and sitting, listening to the music, and watching the drops of water as they sparkle in the marble vases, or besprinkle the surrounding myrtles. You might imagine yourself in some scene embodied from an old romance, when all at once a strange rustling noise is heard in the summits of the neighbouring trees, and hosts of sparrows rise into the air, the birds having been disturbed in their repose by the lighting of the lamps. The scene is at once changed;

exclamations of disgust and annoyance take the place of laughter and gay conversation, and the señoritas, as they hurry from a spot suddenly become so dangerous to their elegant toilettes and rich mantles, are by no means sparing in their invectives against a torment that compels them to forego all the delights of a summer evening's walk with their cavaliers, whose complaints against the authors of the mischief are at any rate equal to their own. For this reason, the *pajaro palmero*, as it is called, is pursued with great eagerness, and every attempt made to drive it from the locality. Frequently in the twilight boys are sent up into the trees with lanterns to catch the birds whilst blinded by the sudden light, and numbers are thus brought to expiate their crimes in the frying-pan, for their flesh is much esteemed. But little, however, can really be done to dislodge them during the summer; it is only in autumn, when the leaves have fallen, and the Alameda possesses no more attraction for their enemies than it does for them, that they condescend to seek a home elsewhere. The same author tells us that he has frequently seen these birds caged in the Canary Isles, but though quite tame, they did not appear to thrive, owing, he imagines, to a lack of insect nourishment.



THE TREE SPARROW (*Passer montanus*), AND THE HOUSE SPARROW (*Passer domesticus*).

THE FIELD OR TREE SPARROW.

The FIELD or TREE SPARROW (*Passer montanus*) is met with in the middle and northern parts of Europe. It is a small bird, of five and a half inches long and seven and three-quarter inches across the wings, much resembling the Common Sparrow in colour, but easily distinguishable from it. The upper part of the head and neck are reddish brown, the mantle rusty grey, and the bridles, throat, and a spot upon the cheeks black, the remainder of the head being white. The lower part of the body is light grey, the beak black, the feet a reddish horn colour. The sexes closely resemble each other, and the young are scarcely distinguishable from the parent birds.

This species inhabits more particularly the eastern side of our hemisphere, extending even as far north as the Polar Regions; it is met with in Asia, and is very numerous in Japan. Meadows, woods, and pastures, are its favourite resorts, and it is only in winter that it seeks the abodes of man, in the hope of obtaining food; when in the woods, it lives in very large parties except during the breeding season. In disposition the Field Sparrow closely resembles its congeners, but is somewhat duller, owing to the little intercourse it has with our race. Its bearing is superior to that of the House Sparrow, as the little creature is courageous, animated, and very trim in its appearance; its flight is light, and its pace easy and rapid; the call-note is short, but is similar to that of the rest of its family. From autumn to spring, seeds and berries constitute its principal food; in summer it feeds upon caterpillars, aphides, and other insects, rendering good service to mankind by clearing the trees and shrubs of these visitants, and thus atoning for the damage it frequently does to fields of wheat and millet. The nestlings are fed upon insects and milky grains of corn. The breeding season lasts from April to August, and each pair rears two families during the year, building their nests in holes of trees, or occasionally in convenient nooks in houses or out-buildings; in structure they are like those of other Sparrows. The brood consists of from five to seven eggs, resembling those of their congeners, but somewhat smaller; the parents sit alternately, the period of incubation lasting about thirteen or fourteen days. The Field Sparrow frequently pairs with other species; when this occurs the male is a Field and the female a House Sparrow; and the young, in such cases, are also capable of laying fertile eggs. These birds are easily caught by means of bird-lime and other simple traps, and may be reared upon all kinds of seeds, varied with a little green food.

THE PLAIN SPARROW.

The Plain Sparrow (*Pyrgitopsis simplex*) is a remarkable species, inhabiting the wooded country of Eastern Soudan, where it is frequently to be seen near the huts of the natives. In size it is larger than most of its congeners, its length being about six and a half inches, and the span of the wings ten and a half inches. The body is slender, and the beak much elongated; the plumage, as its name indicates, is of very uniform colour; the head and neck mouse-grey, the back and wing-covers rusty brown, the wing and tail quills dark brown, edged with a faint rust-red; the lower part of the body is of a light reddish grey, the throat somewhat lighter, and the belly whitish, the eye light reddish brown, the beak black, and the feet reddish horn colour.

This species is found over the whole of Central and Southern Africa, where it lives in pairs or small parties, being rarely seen in large flocks; its habits resemble those of our Field Sparrow, but, unlike that bird, it often frequents the depths of forests. The nest is built in holes of trees, or in the straw roofing of the native huts. Its voice is similar to that of other Sparrows, and the breeding season commences early in spring. We are unacquainted with the appearance of the eggs.

THE GOLDEN SPARROW.

The Golden Sparrow (*Chrysospiza lutea*), also a native of Africa, is one of the most beautiful members of this family. The head, neck, and entire under part of the body are of a golden yellow, the mantle reddish brown, the small upper wing-covers black, the wing and tail quills dark grey, edged with reddish brown. The female is very like that of the Common Sparrow, her tints, however, being more golden, and her throat yellow. The young male is like its mother, but brighter. In size the Golden Sparrow resembles the Common species.

Well-watered plains, abounding in mimosa-bushes, afford the shelter most agreeable to these birds, and from such localities they sally forth in large flocks to fall upon the fields of corn or grass. They generally fly over a very limited extent of country, and exhibit so little timidity that they will allow a man to approach quite close to them before taking alarm; they are thus easily brought down by a shot, which only drives the rest of the party to a short distance. Before the rainy season, when the ground is parched and barren, the Golden Sparrow visits the villages and small towns in hope of finding food in the surrounding farmyards and gardens, and though at first rather shy, soon loses all fear of man.

Incubation takes place during the period of the heavy rains, the flocks dividing into pairs about the month of August, keeping at no great distance from each other, and often building close together. The nest, like that of other Sparrows, is constructed, without much art, of such materials as happen to be in the neighbourhood, and is placed but a few feet above the ground. The eggs, three or four in number, are white, spotted with brown, and about eight lines in length. The young are seen flying with their parents by the end of September or October. The moulting season is in the month of January, and by June or July the coats of the adult birds have acquired their greatest beauty. We have never seen the African Golden Sparrow in a cage, even in its own country, for though striking in plumage, it is entirely deficient in song.

THE ROCK SPARROW.

The ROCK SPARROW (*Petronia rupestris*) is most undoubtedly to be classed with the preceding birds, though differing from them in shape, colour, and habits. The body is compact, its length six and a quarter inches, and breadth across the wings nine and a half inches, the female somewhat less. The beak is comparatively strong, and the plumage very plain, resembling that of the female House Sparrow. The back is greyish brown, marked with blackish-brown and greyish-white spots; the upper tail-covers grey, and striped, as is the forehead, with olive brown; over the eyes passes a lighter streak, and the tail-feathers have a white spot on the under side. In winter the beak is of a brownish grey, in summer of a yellow tint, the upper mandible being darker than the under; the eyes are brown, and the tarsus reddish grey. There is but little difference in the appearance of the sexes after they have attained maturity, and females are often found as beautifully marked as the male. The young are recognisable by a white spot upon the throat.

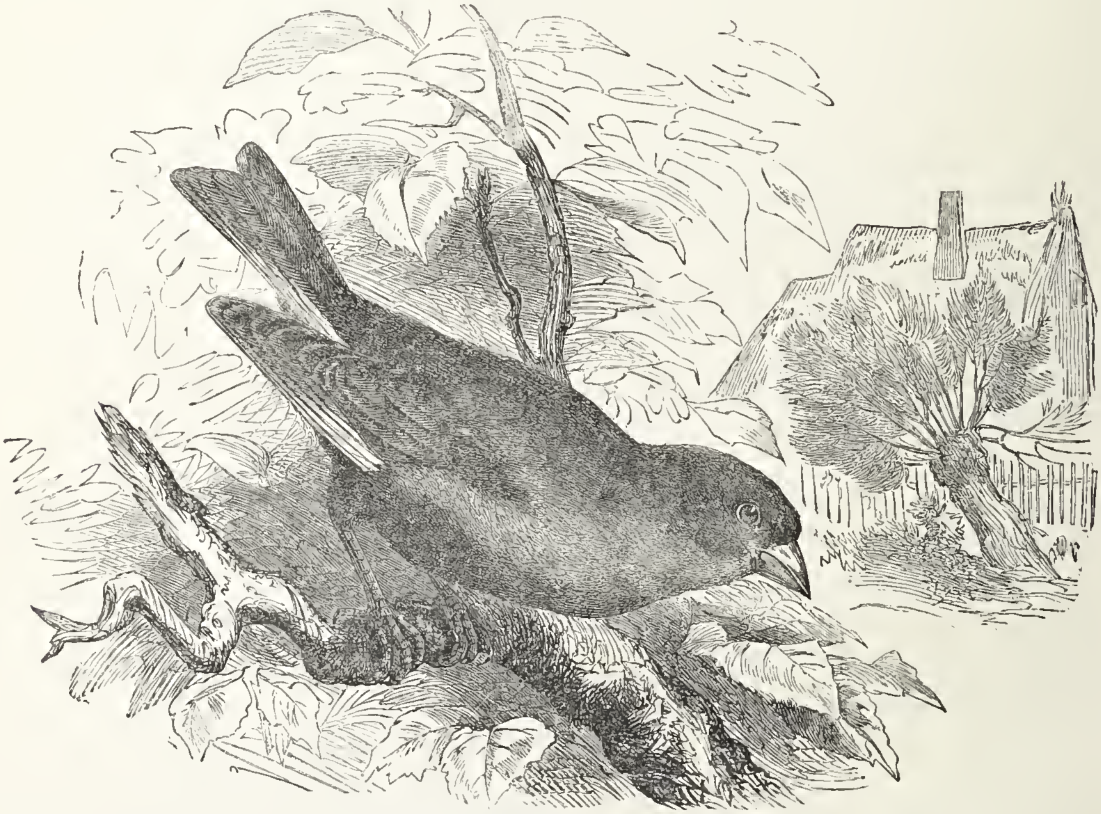
In the South of France, Spain, Algiers, and the Canary Islands, the Rock Sparrow is extremely common. It is found principally in mountainous districts, among old ruins, but is often met with near towns or villages, and in lonely valleys; it is by no means afraid of man, though it but rarely comes down into the streets, preferring to remain in the retreats it has chosen in cliffs or old towers, until compelled by hunger to seek its food in the adjacent fields. Above all other things it prizes liberty, and exhibits a foresight and prudence in its intercourse with our race that distinguishes it in a remarkable degree from the rest of its congeners. In its movements the Rock Sparrow bears a considerable resemblance to the Cross-bill; its flight is produced by a short, quick vibration of the wings, upon which it poises itself with a hovering motion before perching. It hops nimbly upon the ground, and while sitting assumes a defiant attitude, and wags its tail repeatedly. The voice of this bird might almost be termed a song, and is not unlike that of the Bullfinch, though by no means so agreeable or varied. The breeding season commences at the end of spring, or the beginning of summer. This species builds in holes in rocks, walls, or roofs, and with so much precaution are their retreats selected that it is extremely difficult to find a nest. The one we saw was constructed of straws and bits of cloth and linen, carelessly intermixed, and lined with feathers, hair, and wool. One of these little cradles is often used for years by the same birds, who make whatever improvements are necessary as spring returns. The eggs, which are five in number, are larger than those of the generality of Sparrows, and of a greyish or dirty white, spotted and streaked with slate colour, the markings being most numerous at the broad end. We are unable to speak with certainty as to whether both parents brood, although they certainly co-operate in taking care of their progeny. When the young first leave the nest they associate in flocks, and fly about the country until the autumn, the parents, in the meantime, employing themselves in rearing a second and third family. Rock Sparrows subsist principally upon insects, seeds, and berries. In Spain and Germany they are often to be seen hopping through the dirt in the streets, and in the former country are brought to market spitted upon a stick. They are easily obtained by the help of nets or limed twigs, but are so wary that it is difficult to bring them down with a gun. In spite of its shyness this species is very well adapted for the cage, and will become so tame as to take its food out of the hand of its master.

The HAWFINCHES (*Coccothraustæ*) have usually been classed amongst the true Finches (*Fringillæ*), but in our opinion they should be regarded as the type of a peculiar family. The birds belonging to this group are recognisable by their compact body, long wings, comparatively short tail, short, powerful legs, and above all by their strong, rounded, thick, and pointed beak, furnished with a longitudinal groove within the upper mandible, behind which there is a transverse ridge, placed directly above a corresponding depression in the lower mandible, surrounded by a thickened margin. The plumage is rich, somewhat lax, and, though striking, not brightly coloured. The members of this group are found in all parts of the world—indeed, some species are extremely numerous, but our knowledge of their mode of life and habits is but limited.

THE GREEN GROSBEAK.

The GREEN GROSBEAK (*Chloris hortensis*), or GREENFINCH, as it is generally called, must be regarded as forming, as it were, a bond of connection between the present family and the Goldfinches. This bird has a strong conical beak, somewhat compressed at its edges, with a small ball-like elevation in the interior of the upper mandible. The feet are longer than those of the true Hawfinch, and the body elongated, but powerful. The plumage is principally of a green colour, that of the male being olive-green on the upper part of the body, the lower portion greenish yellow, the wings ash-grey, the tail black, the anterior quill-feathers of the wings and the five exterior tail-quills beautifully marked with yellow. The beak is of a yellowish flesh colour, and the eye brown. The plumage of the male is duller during the winter, owing to the grey with which the feathers are then bordered. The coat of the females never loses this sombre tint: the young are distinguishable by the dark streaks upon their bodies both above and below.

The Greenfinch inhabits the whole of Europe, and a large portion of Asia, with the exception of the most northerly countries: it is also numerous in Spain, but quite unknown in Siberia. Everywhere it is found about pasture-land, and such localities as are at no great distance from human habitations; it avoids all thickly-wooded places, and usually lives in pairs or small parties, the latter increasing into large flocks only during their passage from one country to another, at which times they associate freely with many other small birds of kindred habits. The Greenfinch generally selects some small coppice or garden for its residence, and passes the entire day in flitting from place to place, or upon the ground, whither it resorts in search of food. At night it seeks a shelter in the branches of some thickly-foliaged tree. Although clumsy in appearance it is a lively, active bird, light and easy in all its movements. Whilst perched the plumage is generally allowed to hang heavily round the body; but at times the bird stands erect, and lays its feathers so close and flat as to present an entirely different exterior. It hops with facility when upon the ground, and its course through the air is light and undulating, owing to the manner in which it opens and closes its wings; it always hovers before alighting. When flying, these birds repeatedly utter their call, which, though a soft note, can be heard at a considerable distance; when employed as a cry of warning, it is accompanied by a gentle distinct whistle; on the approach of man they rise at once into the air, and thus render the task of shooting them both wearisome and difficult. Seeds of all kinds afford them nourishment, although they prefer those of an oily nature, such as rapeseed or linseed, only seeking food upon the trees when the ground is covered with snow. Fields of hemp offer an irresistible attraction to these little creatures—indeed, they seldom leave them until the crop is entirely destroyed; they are also at times very troublesome in fruit gardens, in spite of the services they render in clearing the trees of insects.



THE GREEN GROSBEAK (*Chloris hortensis*).

The Greenfinch breeds twice or even thrice during the year. Just before the time for pairing, the movements of the male are very animated; it sings constantly, as it soars rapidly into the air, raising its wings so high at each stroke that the tips almost touch each other. It thus sweeps backwards and forwards, turns round in circles, and then, slowly fluttering, descends to the spot from which it rose. Should another male venture to approach the little couple, he is immediately driven off by his happier rival, whilst the female remains quietly perched, watching the proceedings of her mate with great delight. The nest is built of such materials as are easily obtained, and usually placed on a forked branch, or close against the stem of a tree. This beautiful structure consists of an outer wall formed of straws, and fibres or fine roots, upon which is spread a layer of green moss or some similar material; the interior is lined with a warm blanket of wool, and the mossy exterior is always woven together with hair. The nest is of a round shape, its walls including rather more than the half of a sphere, being from two and a half to two and three-quarter inches wide at the top, and about two inches deep. The construction of this snug domicile devolves entirely upon the female, her mate merely endeavouring to lighten her labours by his company. The first eggs are laid about the end of April, the second in June, and the third at the beginning of August; they are from four to six in number, and from nine to sixteen lines in length; the shape is but slightly oval, the shell thin, smooth, and of a blueish-white or silvery colour, marked more or less distinctly with light red spots, which form a kind of irregular wreath at the broadest end. The female sits upon her brood for about a fortnight, and is fed and tended during that time by her mate. Both parents, however, combine in the care of their progeny, feeding them at first with seeds softened in their crops, and afterwards with the same food in its natural state. These duties are but of short duration, the young soon quit the nest to go forth alone into the world, or fly in company with other Finches; nevertheless, they rejoin their parents as soon as the latter have fulfilled their work of incubation. The Greenfinch is much sought after on account of the delicacy of its flesh, but we cannot recommend it as suitable for domestication, as its song is very insignificant, and its disposition so quarrelsome that it will not live in peace with others of its race; on the other hand, we must mention that few species adapt themselves so readily to life in a cage.

THE HAWFINCH.

The Hawfinch (*Coccothraustes vulgaris*) is easily distinguishable from the true Finches on account of the unusual heaviness of its shape: its length is seven inches, and breadth across the wings twelve inches; its tail two and a half inches long, and the wing three and three-quarter inches from the shoulder to the tip. The female is somewhat smaller. The plumage is greyish yellow upon the fore-part of the head, and brownish yellow at the back and on the cheeks; the neck and throat ash-grey, the back light brown; the lower part of the body brownish grey, and the throat black; the wings black, with a white spot in their centre; the beak a dark blue in winter, and in summer grey, somewhat darker towards the tip. The eye is light grey, the foot light red. In the female all these colours are paler, and the black patch upon the throat smaller than in the male. In the young birds the feathers on the head are greyish yellow, those on the nape of the neck dirty brownish yellow, the back greyish brown, the lower part of the body greyish white, shading into reddish grey upon the throat and sides, and marked with blackish brown. The middle tail-feathers are very peculiar, becoming broader towards their ends, which are slightly forked.

These birds inhabit all the temperate portions of Europe and Asia, and are found in Sweden, also in the southern and western parts of Russia, and are amongst the summer visitors to Siberia. They fly about in large flocks, often reaching Algiers and Morocco in the course of their migrations; and generally prefer such mountainous or hilly countries as are well wooded, occasionally frequenting fruit and vegetable gardens. During the summer each little pair settles in a retired spot, selecting such districts as are at no great distance from a cherry orchard, and passing the night perched close together upon the twigs of some thickly-foliaged tree. The Hawfinch, as its shape would lead us to suppose, is very heavy and inactive, every change of place being apparently the subject of lengthy consideration; even if alarmed, it only flies a few paces, immediately returning to the same spot; its movements among the branches are rather more active, but its little legs seem hardly able to support its body when upon the ground. Its flight is swift, undulatory, and noisy, owing to the rapid motion of its wings; it usually hovers before perching. Despite the clumsy appearance of this bird, it is extremely cunning and prudent, easily distinguishing a friend from a foe, and taking every precaution for its own safety. At the approach of danger it conceals itself so artfully among the foliage as to render discovery almost impossible; at other times it will perch on the topmost branches in order to observe the movements of an enemy—indeed, we ourselves endeavoured some years ago to capture one of these wary little creatures with the help of some favourite seed, but eight days passed before we were successful, as the use of our gun appeared to be quite understood by the intended victim. These birds are fond of beech-nuts and cherries, preferring the latter solely on account of the kernels; in order to obtain which, the cherry is bitten off and its stone separated from the fleshy part, the latter being rejected. The fruit stones are cracked with such force and noise that the process may be heard at thirty paces from the tree, and the kernel is then extracted and swallowed. When fruit is scarce the Hawfinch is compelled to seek its food upon the ground, occasionally doing great damage amongst our seeds. In winter it subsists almost entirely upon the fruit of the hawthorn and other stone fruits and berries, from the latter of which it extracts the seeds as its favourite portion; it also consumes various kinds of insects, such as beetles and their larvæ, in great numbers, and will even catch Cockchafers (*Melolontha*) when upon the wing, and devour them after throwing away the legs and elytra. One or two broods are produced during the year, from about May to July, each pair taking possession of a little district which no other bird is permitted to approach, the male keeping constant watch for intruders from the top of his tree, or detecting them by short flights in the vicinity of his nest. His song is a disagreeable, sharp, whirring noise, which we may hope affords greater pleasure to his mate than it does to us, for her little partner is most indefatigable in his efforts to entertain her with his voice, often singing for hours together, accompanying his notes with rapid and varied gesticulations. The nest, which is easily recognised from its unusual width, is built of twigs and straws, lined with softer materials, firmly bound together with hair, and though by no means elaborately constructed, may be classed amongst the number of well-built nests; it is usually placed upon a thin branch, extreme care being taken to ensure its concealment. The eggs, three or five in number, are an inch long, of a dirty greenish or yellowish colour, marked with various shades of brown or grey. The female sits during the greatest part of the day, but is relieved for a short time about noon, when her mate takes his place upon the eggs. The young are tended by both parents for many weeks after they are hatched, as it is long before their beaks are capable of cracking the cherry-stones from which they derive the principal part of their food. The serious injury done by this species in orchards explains the extreme aversion in which it is held; one family alone will completely clear a tree of its fruit in an incredibly short time, and as long as a single cherry is left the destroyers will return, in despite of all the noises made in the hope of driving them from the spot. The gun affords the only means of scaring them, and even to its sound they soon become accustomed. Few birds are so pertinaciously and constantly pursued, and yet, thanks to their cunning, they are more than a match for their numerous enemies.

Attempts to domesticate the Cherry Hawfinch usually prove unsuccessful, as its formidable beak and quarrelsome habits render it dangerous to its companions; it has even been known to eat its own young when in captivity.

THE EVENING CHERRY HAWFINCH.

The Evening Cherry Hawfinch, or Sugar-Bird (*Hesperiphona vespertina*), (so called on the authority of Cooper, who tells us that its song is only heard in the evening twilight), is the most beautiful species belonging to this family. It inhabits the almost unexplored northern parts of North America. The Sugar-Bird, as it is called by the Indians, is from eight to eight and a half inches long, three inches of which belong to the tail; the wing measures four and two-third inches from the shoulder to the tip. In the male bird the top of the head, wings, and tail are deep black, the line over the eyes, the middle of the back, lower part of the body, and under wing and tail covers, being of a bright yellow. The nape of the neck, sides of head, throat, and back of the neck, together with a portion of the back and breast, are dark olive brown, the sides of the shoulders yellow, with a greenish gloss, the quills of a dazzling whiteness at the tip—all these various colours being so blended as greatly to enhance the beauty of the whole coat. The female is without the yellow line upon the head and the white spot upon the hinder quills; the other feathers are paler and greyer in their tints; some of the wing-feathers are tipped with white.

We learn from Townsend that the Evening Hawfinches are very numerous in the pine forests of Columbia, and so tame as to become an easy prey. Their song, which is popularly supposed to be only heard in the twilight, may in favourable localities be distinguished during the entire day, but as soon as night approaches they withdraw to the tree tops, and do not stir again till morning dawns. They seem to be of a social disposition, and are rarely seen living alone. They feed principally upon the seeds of pine cones, but likewise consume the larvæ of large black ants in great quantities. Their cry when in search of food has a somewhat screeching sound; the actual song commences about noon; this latter is a most dismal performance, and its tones are so pitiful that the bird itself seems to feel their influence, and pauses from time to time as though overcome by its own melancholy music, recommencing, however, very shortly, but with the same result as before. Nothing further is known as to the habits of this beautiful bird, which may be reckoned among the greatest rarities in our collections.

THE LARGE-BEAKED HAWFINCH.

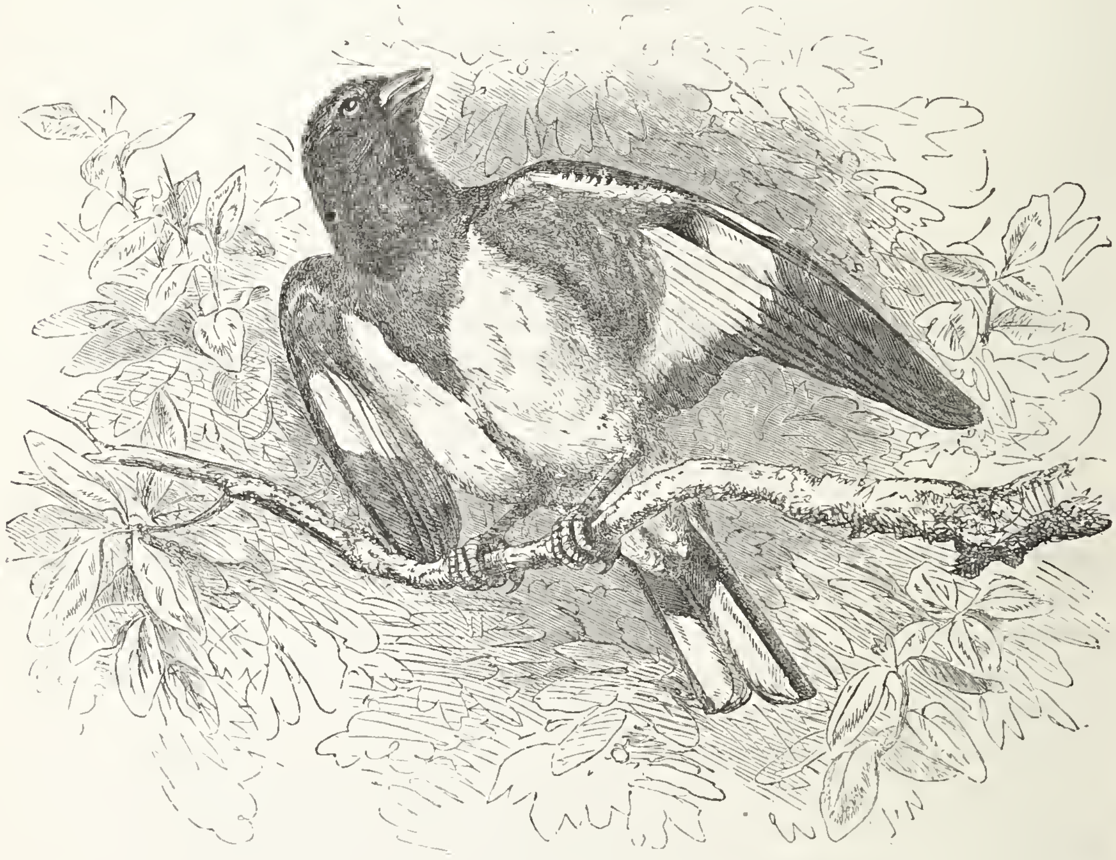
The Large-beaked Hawfinch (*Geospiza magnirostris*) is a very remarkable species, inhabiting the Galapagos Islands, and is at once distinguishable by its enormous beak and short tail. The plumage of the old male is raven black, that of the female brown; the head is horn colour, and the feet dusky. These birds spend the greatest part of the day in searching for food upon the ground, and Darwin mentions having seen one of them riding fearlessly upon the back of a lizard.

The PARROT FINCHES (*Pityli*) are now generally included amongst the *Conirostres*, and associated with the Hawfinches. They are known by their short wings, long tail, and peculiar beak, which is very strong, thick, and bulging, the edge being more or less compressed, and slightly angular. The first quill is always very short, and the third and fourth usually the longest. The wings are powerful, the tarsus high, and the toes of moderate length. The plumage is thick, soft, and entirely without metallic brilliancy. In colour it is usually grey or greenish grey, occasionally, but very rarely, marked with reddish yellow, black, or some bright colour. South America is the true habitat of these birds, which are seldom found in the northern parts of the Western Hemisphere. They are for the most part incapable of song, although some few are highly gifted in this respect. In their general habits they resemble the Hawfinches, and, like them, subsist upon seeds, berries, and insects.

THE ROSE-BREASTED HAWFINCH.

The Rose-breasted Hawfinch (*Coccoborus ludovicianus*) is an American bird, equally remarkable for its beauty of plumage and sweetness of song. It is about seven inches long and eleven inches across; the wing measures three inches, and the tail rather more than two. The body is compact, the wings broad and of moderate length; the tail comparatively short and somewhat rounded; the beak short, strong, pointed, and almost conical; the upper mandible slightly hooked. The plumage is soft, brilliant, and very striking in its colours. The entire head, as well as the upper part and nape of the neck, back, wings, and tail is glossy black; the first row of feathers on the wing-covers and the tips of those on the second row are white, as are the roots of the primary quills, the wings being thus bordered by a double band of white. The inner web of the three exterior tail-feathers is also white, and the sides of the breast, under part of the body, lower portion of the neck, and middle of the breast, of a magnificent carmine red, the latter colour being also visible upon the lower wing-covers. The beak is whitish, the eyes are brown, and the feet greyish brown. The plumage of the female is olive grey, spotted with dark brown, each individual feather being marked in the middle with the same colour. Over the head runs a yellow stripe, spotted and edged with dark brown; the eyes are surrounded by a white line; the wings and tail are brown, the lower portions of both having a yellowish shade; the former are bordered by two light lines, which are much narrower than in the male. The neck, breast, and sides are marked with dark brown, and the lower wing-covers shaded with rose colour.

Audubon tells us that he frequently observed these magnificent birds in some parts of Louisiana, Kentucky, and Cincinnati, during the month of March, as they passed over the country in the course of their migrations. Pennsylvania, New York, and other States lying eastward, are likewise often visited by them; but they are rarely seen in Labrador or on the coasts of Georgia, or Carolina, although they inhabit the mountains of those regions. They are generally numerous near the banks of a river, and large parties of them frequent the neighbourhood of Lakes Ontario and Erie. When in flight, these beautiful Finches rise high into the air with violent and very decided strokes of the wings. The call-note is uttered whilst flying, and ceases as soon as the bird has alighted upon a tree-top, where it remains perched erect and motionless for a few minutes, and then seeks shelter in some retired and shady spot. Many varieties of seeds, buds, and tender shoots form their principal food, and they are in the habit of seizing insects while on the wing. The nest, which is built chiefly of twigs and leaves, lined with hair or delicate fibres, is placed at variable distances from the ground, such localities being preferred as are in the vicinity of water. There is but one brood during the year, and both parents co-operate in the duties of incubation. The young are at first fed upon insects, and at a later period on seeds, softened in the crops of the parent birds; they do not attain their full beauty



THE ROSE-BREASTED HAWFINCH (*Coccoborus ludovicianus*).

of plumage until three years old. The song of the Rose-breasted Hawfinch is rich and pleasing. Nuttall tells us that in fine weather it will sing during the whole night, pouring out floods of song as varied and enchanting as those of the Nightingale, the little songster appearing to manifest the greatest delight at its own performance of strains that are alternately plaintive, gay, and tender. The Mocking-bird is the only American species that can bear comparison with it, so that its vocal powers, combined with its great beauty and the ease with which it is tamed, render it one of the most valuable birds of its size for purposes of domestication.

THE CARDINAL GROSBEAK.

The Cardinal or Tufted Grosbeak (*Cardinalis Virginianus*) is closely allied to the species we have just described, as is plainly indicated by its compact body, short wings, graduated tail, and upright attitude. The length of the Cardinal is about eight inches, its breadth rather more than eleven inches, the wing, from shoulder to tip, three inches, and the tail three and a half inches. The soft and glossy plumage of the male is very beautiful, though almost uniform in its tints, the prevailing colour being dark red; the head is scarlet, and the face and throat deep black; the inner web of the wing is light brown, the shafts being of a darker shade, the beak bright red, the eyes dark greyish brown, the feet pale brown, shaded with greyish blue. In the female the tints are paler than those of her mate, and the tuft shorter; the back of the head, nape of the neck, and upper part of the back are greyish brown; the forehead, eyebrows, and tuft deep red; the wings dark brownish red. The individual quills are bordered with greyish brown, the lower part of the body is greenish brown, the breast and middle of the body of a reddish hue, and the beak pale red.

The Cardinal is found in nearly all parts of North America, inhabiting the Southern States in large numbers; but, we believe, is entirely unknown in the extreme north of that continent. It prefers such districts as are near the coast, and during mild seasons will remain for years together in the same locality; but should extreme cold set in, it at once changes its abode for a more southern region. Its life is passed upon the trees, from which it makes short excursions over the neighbouring country. Should food be scarce in its favourite woods, it visits fields and gardens, and is occasionally met with in the villages, where it receives a hearty welcome on account of its brilliant plumage and delightful song. In the summer time these birds may be seen in pairs; in winter they associate in small parties, living on very friendly terms with many other species, and constantly frequenting farmyards, where their strong beaks are of the greatest service to them, enabling them to feed upon the various kinds of corn scattered over the ground; at night they sleep upon a thickly-foliaged tree, and thus survive the winter months. They are remarkably restless, and rarely remain longer than a minute in one position; their flight is abrupt, rapid, and noisy, the movements of their wings being accompanied by a constant opening and closing of the tail; they seldom fly to any great distance, and hop nimbly, either upon the ground or in the trees. Should the winter prove severe, the Cardinal journeys southward in search of a milder climate, returning about March, in company with other migratory birds. Audubon tells us that these journeys are accomplished in some measure *on foot*, the little creature hopping from one bush to another, and flying over more considerable distances. The males return some days previous to their female companions; shortly after their re-appearance the pairing season commences, and is always inaugurated by violent disputes and battles between the males, who chase each other from place to place with bitter animosity, and then return to pour forth a song of triumph in the ear of their mates, to whom they are most tenderly attached; bushes or trees in the vicinity of a river or farmyard are the localities generally preferred for building purposes, and the nest is frequently placed within a few yards of that of a Mocking-bird. In the Northern States the female lays but once during the year, but further south three broods are by no means unusual, each consisting of from four to six eggs of a dirty white colour, marked with olive brown. The food of the Cardinal consists of corn, seed, and various berries; during spring it devours the berries of the sugar-maple in large quantities, and in summer wages continual war against beetles, butterflies, and caterpillars, commiting great depredations in the gardens, attacking the fruit and destroying the bees. American naturalists are loud in their praises of the song of this bird, to which they give the name of "the Virginian Nightingale," asserting that its note sare fully equal to those of its European namesake, both in purity and variety of tone. Audubon describes its song as resembling the sound of a flageolet, commencing in a loud clear key, and gradually sinking until scarcely audible. It is during the breeding season that these notes are heard in their greatest perfection, the little songster appearing to feel the full beauty of its own performance, as it inflates its breast, spreads its tail, and opens its wings, turning from right to left as though to attract attention to the wonderful sounds it is producing. Again and again these strains are renewed, the pretty vocalist only pausing from sheer exhaustion, sometimes continuing its song almost without intermission from sunrise to sunset, occasionally accompanied by the less pretentious effort of its mate. European naturalists are by no means so enthusiastic in their notices of this bird, and pronounce its song to be more striking than beautiful. The Cardinal is easily reared in captivity, but it is so quarrelsome as to be dangerous to any companions confined in the same cage.

THE DOMINICAN FINCH.

The DOMINICAN FINCH (*Paroaria dominicana*) is the species we shall select as the type of the group *Paroaria*, or Grey Finches, so called from the leaden colour of a portion of their plumage, the entire back being grey, the sides of the belly white, and the head usually red. This bird is slender in shape, with pointed wings that reach almost to the middle of the rounded tail; the beak is straight and thick, but slightly hooked at its tip, the edge somewhat compressed, with a slight ridge near the centre; the legs are powerful and of moderate length. . The Dominican Finch is about six and a half inches long and ten and a half inches across; the wing about three and a half inches long and the tail three inches. The plumage of the nape of the neck, back, wings, and tail is of a dark slate colour; the lower part of the body white, marked upon the sides of the breast with a greyish shade; the head, gorge, and fore part of the neck are, with the exception of the black ear-covers, of a deep blood red, the back of the neck being separated from the grey nape by a white band. The upper mandible is of a blackish grey, the lower one of a whitish tint; the eye is brown, and the legs a brownish flesh colour. There is but little difference between the plumage of the male and female.

These beautiful birds inhabit the northern part of Brazil, and are found principally about Bahia, Para, and the river Amazon, where, like most of their tribe, they live in pairs, on bushes that border the large forests; but are by no means numerous. They are very quiet and simple in their habits, and will live for a considerable time in a cage. Their song is short and twittering, and the call-note clear.

THE TINY FINCH.

The TINY FINCH, or LITTLE PARSON (*Gyrinorhyncha*, or *Sporophila minuta*), is a small species, measuring not more than five inches in its entire length. The upper part of the body of the male is black, and the lower portion a rusty red. The back of the female resembles that of her mate, but the breast is reddish brown, and the belly a rusty yellow; the young are like their mother.

Like its congeners, this bird is found principally upon the grassy plains of Brazil, where it lives upon various kinds of seeds. It is a smart, pleasing little creature, with an agreeable voice, and on these accounts is much valued by the Brazilians, in spite of the damage it occasionally does to their crops. The Tiny Finch is distinguished by its small beak, hooked at the tip, resembling that of the Bullfinch in shape; by its comparatively long wings, short tail, and by the black shades that predominate in the upper portion of the plumage of the male bird.

THE DIADEM GROSBEAK.

The Diadem Grosbeak (*Catamblyrhynchus diadematus*), another member of this family, inhabits Santa Fé de Bogota. Its length is five and a half inches, and the wing measures two inches and a half. The beak of this bird is very thick, and not unlike that of the Bullfinch in shape, the upper mandible being but slightly hooked; the wings are rounded, the tail somewhat shortened at its sides, and the feet very strong. The bridles, cheeks, sides of the neck, and whole of the lower part of the body, are of a chestnut brown; the brow and front of the head orange colour; the back of the head and nape black, and the remainder of the upper part of the body blueish grey; the wings and tail are brownish, the former being edged with blueish grey. The beak is black, as is a narrow streak upon the cheeks, and the feet are brown. We are totally unacquainted with the habits of this species.

THE ASHY-BLUE PARROT FINCH.

The Ashy-blue Parrot Finch (*Pitylus cœrulescens*) is a large bird, about nine inches long and twelve in breadth, the wings and tail measuring about four inches. Its beak is thick, arched, and compressed at the margins, terminating at its tip in an abrupt hook. The wings are short, and when closed do not extend beyond the upper tail-covers; the two first quills are considerably shorter than the third; the tail is very long, and its three exterior quills much shorter than the six that form the middle portion; the small delicate legs seem quite disproportioned to the size of the beak. The plumage of both sexes is soft, but by no means thick; that of the male being a deep blackish slate colour shaded with indigo blue, and the mantle and wings of a blueish green. The face stripes, region of the eyes, ear-covers, front and sides of neck, chin, throat, and upper part of the breast, are deep black, the wing and tail feathers black, the former white on the anterior border; the lower wing-covers are pure white, the eye is greyish brown, the beak of a reddish colour, and of a deeper shade at its tip; the legs are brownish black. In the plumage of the female the bright colours are not so vivid on the upper part of the body; the black portion of the throat is not so deep in its hue, and the entire coat appears duller; the beak is of a pale red. The young male is known by the light yellow coloured beak, and by the inferior purity of its tints.

This species is not frequently met with. It inhabits South America, and usually lives in pairs, avoiding the interior of forests, and delighting to disport itself in the sunny meadows of its native land. When perched in the brushwood, the contrast between its bright red beak and dark coat and the green foliage renders it a conspicuous object in the landscape. The call is a chirping note, not unlike that of the Hawfinch.

THE MASKED PARROT FINCH.

The Masked Parrot Finch (*Caryothraustes Brasiliensis*) is closely related to the last-mentioned bird. The formation of the beak is very similar to that above described, but it is somewhat less arched, and not quite so thick. The wings, which are comparatively long, reach when folded half way down the remarkably short tail; the latter is slightly rounded, and its exterior quills but little shorter than the rest; the legs are weak, and the very thick plumage beautifully coloured. In size this species resembles the common Hawfinch, being from six and a half to seven inches long; the wings measure rather more than three inches, and the tail three inches. The entire face is coal black; the brow, region of the eye, top of the head, sides of the neck, lower part of the throat, and middle of the belly, bright green; the breast and sides of the body are shaded with a darker tint. The mantle is olive green, the wing-feathers greyish brown, with a border of green edged with yellow. The two middle feathers of the tail are almost entirely olive green, the rest greyish green, with a yellowish shade upon the inner web; the outer web is olive green. The eye is brown, the beak a brilliant black, somewhat paler towards the base, which in the old birds is of a leaden hue; the legs are reddish brown.

THE DOMINICAN FINCH (*Paroaria dominicana*).

We know little or nothing of this bird beyond the fact that it inhabits some parts ot Brazil, and is generally found in small flocks in the vicinity of woods and forests, or occasionally living solitarily or in pairs.

THE HABIAS.

UNDER the name of HABIAS (*Saltator*) we shall include a group of South American Parrot Finches that are distinguished by their thick beaks, short wings, and long tails, the latter being rounded at the tip, as are the wings. The first quill of the latter is much shorter than the rest, the legs are very powerful, and the beak, which is black, high, and compressed at its edge, is almost straight at the tip. The upper part of the back and wings are of an olive green.

THE CAPI.

The CAPI (*Saltator cœrulescens*) is nearly of the same size as our English Blackbird, being about eight inches long and twelve broad; the wing measures four inches from the shoulder to the tip, and the tail three and a half inches. The plumage upon the nape, back, and wings is blueish grey, shaded with yellowish brown; the bridles and a line over the eyes and throat are white, the latter being divided from the chin by a black streak; the upper part of the breast is grey, and the lower portion of the body of a paler shade; the wings and inner web of the wings are a rusty yellow, spotted with grey; the tail a dark slate colour, the beak brownish grey, and the feet a dusky black.

These birds are found in considerable numbers in the southern parts of Brazil, where they frequent the trees, avoiding deep forests, and at times do considerable damage in the gardens; they are usually seen in pairs or small parties, and are by no means afraid of man, in the vicinity of whose dwellings they are constantly to be met with. They fly slowly and with difficulty, rarely coming to the ground, on which their movements are neither animated nor easy; their life is spent principally in the midst of the trees or bushes, from whence they fly forth to procure the seeds, buds, snails, or insects that constitute their principal food, though they occasionally eat the strips of meat that have been laid to dry in the fields. The song of the Capi is extremely insignificant, and except during the breeding season scarcely deserves to be called by that name. The nest is built about the month of November; it is carelessly formed of moss, roots and twigs of various sizes, a high thick branch affording the favourite locality for its construction. The eggs, two or three in number, are greenish blue, marked at the broad end with a variety of spots and lines. Little is known of the habits of these birds beyond what we are told by Azara, who kept one of them caged for some time in order to observe its conduct; it would take almost any food that was given to it, but, strangely enough, ate like a quadruped, taking large pieces into its beak and chewing them.

THE RARITA, OR RARA (*Phytotoma Rara*).

The PLANT CUTTERS (*Phytotoma*) are a very remarkable race of birds, closely resembling the Habias in their general appearance and habits, but differing from them in the construction of their beaks, which are furnished at their edge with a saw-like apparatus, that enables them to cut down the various plants upon which they feed. Most marvellous tales have been told by early writers of the habits of these destroyers, and although much has been proved to be fabulous, still there can be no question that the damage done by them to the crops in their native land is both extensive and serious, so that they are proportionably dreaded and persecuted by its inhabitants.

THE RARITA.

The Rarita, or Rara (*Phytotoma Rara*), the most redoubtable species, has been fully described by Molina, who named it from the sound of its cry. Its length is six and a half inches, its breadth eleven inches, the wing measures three and one-third, and the tail two and a quarter inches. The plumage of both sexes is very similar: the upper part of the body is of a dark olive green, each feather having a black shaft and a greenish yellow border; the lower part of the body is of a paler shade, with the same dark markings along the shafts of the feathers; the brow is rust colour, becoming darker towards the top of the head; the throat and lower part of the body yellow; the feathers on the upper part of the breast and tail are of a rusty red at the upper portion, becoming darker towards the roots; the wings almost black, edged with two white borders; the tail-feathers are dark at the tip and on the outer web, and the inner web rust red. The colours of the female are paler and greyer than those of her mate; the beak and feet a blackish grey, and the eye bright red. D'Orbigny mentions two other species, one of which he has called the Azara, in honour of that naturalist, and the other the Bolivian Plant-mower.

From the above-mentioned writer we learn that these birds inhabit the temperate zone, and are rarely found beyond such parts of the country as are cultivated by man; they constantly frequent vineyards, fields, and gardens in company with Habias, doing terrible damage by breaking the plants, cutting off the young shoots, and eating the fruits, continuing this work of destruction throughout the whole year. They are rarely or never seen upon the ground, but fly very low when in search of food, seldom passing any length of time upon the wing. Their cry is extremely disagreeable, resembling the grating sound of a saw. Another author from whom we quote, bears testimony to the terrible mischief wrought by these bold and formidable marauders, who are all the more to be feared as they carry on their devastations in the twilight of the early morning and evening, at which times they are constantly occupied in sawing down young plants close to the ground, working until their beaks are green from the sap that flows from the stalks at which they labour; indeed, were this species as numerous as other Finches, no field could escape their destructive propensities. The capture of these birds is attended with but little difficulty, as they perch during the day upon trees or fences, and testify but little alarm at the approach of man. The only information we have as to their breeding is that the eggs are white, spotted with red.

The TANGARAS are a very peculiar and numerous race of Finches, inhabiting America, and distinguished by the variety and beauty of their plumage. In size they resemble our Sparrows; their beak is always conical, and the upper mandible furnished with a kind of notch near its extremity, which terminates in a slight hook. The wings and tail are of moderate length, and the thick plumage of the male brilliantly dyed with blue, green, or red, intermixed with black and white. The coat of the female is much less brightly coloured.

The tropics must be regarded as the real habitat of these glowing birds, though we find them spread over the greater part of the American continent; some species frequenting woods, whilst others prefer to perch nearer the ground, upon low trees or bushes. Despite the great beauty of their plumage, they are by no means favourites in the countries they inhabit, owing to the damage done by them to fields and plantations; indeed, their exquisite colouring is their only merit, as their disposition is very uninteresting, and they are almost without any kind of song. Berries and various kinds of fruit constitute their principal food, many eat insects, and some species subsist entirely upon dry seeds.

As our space only permits us to mention a few of these birds, we will first select the TANGARAS PROPER, as being the largest of this family. The beak of the True Tangaras is compressed and slightly bent, conical, and almost straight at the tip; the wings are pointed, and of moderate length; the tail is long, and broad at the end, which is somewhat forked, and of a green or blue colour; the plumage presents but little variety in species.

THE ORNATE TANGARA.

The ORNATE TANGARA (*Tangara ornata*) is four inches long, the tail measuring about three inches more, and the wing three inches from the shoulder to the tip. The plumage of the male is bright blue upon the head, neck, breast, and lower part of the body, with a greyish shade where the roots of the feathers are visible; the middle of the belly, legs, and rump are greenish grey; the back is of a dirty greenish grey, shaded with blue; the lesser wing-covers are blue at the shoulder; the smallest feathers of these parts are lemon yellow, and the remainder of the wing greyish brown, each feather being bordered with green. The tail is a greyish brown, its middle portion shaded with green, the rest only edged with that colour. All such parts as are blue in that of her mate are in the plumage of the female greyish green, shaded with blue; the green and yellow markings of the wings being much paler and more indistinct.

All the countries from the Amazon to Guiana, and the woods upon the coast of Brazil, afford a home to these birds; they seem to prefer the shelter of the plantations that abound in these districts to the sombre retreat of large forests, and pass their active, cheerful little lives in the immediate neighbourhood of man, to whose orange and lemon trees they are at once ornaments and formidable enemies. Except during the pairing season these Tangaras have no song, but merely utter a simple and monotonous call-note. The nest is built upon a tree, and resembles that of a Greenfinch.

Our knowledge of the North American Tangaras is much more extensive. We shall confine ourselves, however, to the mention of two species belonging to the group denominated

FIRE TANGARAS (*Pyranga*). The members of this group are slender, their wings long, pointed, and reaching almost to the middle of the rounded tail. Their beak is strong, conical, vaulted, and strongly compressed at the margins; the edges of the upper mandible are somewhat bent outwards, and jagged towards the middle portion, but straight near its extremity, where there is a scarcely perceptible notch. The plumage of these birds is thick and smooth, that of the male being generally red, that of the female yellow.

THE FLAX BIRD.

The FLAX BIRD (*Pyranga rubra*) is the most numerous and best known of the two species we shall describe. Its length is six and a half inches, its breadth ten and a half inches, the wing being four inches long, and the tail two and a half inches. The coat of the male, when in its full beauty, is of a most magnificent scarlet, the upper portion of the feathers being of that colour, and white at their roots; the latter tint, however, is never visible during life, though very conspicuous after the bird has been stuffed. The wings and tail are of a brilliant black, affording a striking contrast to the glowing little body. Very shortly after the breeding season this plumage disappears, and is replaced by feathers resembling in their hues the quiet dress of the female; the upper part of the body being then of a greenish colour, and underneath of a pale yellow. This costume is followed after the moulting season by a third, when the male appears prettily spotted with bright red and green, and presents a most elegant appearance.

THE FIRE TANGARA.

The FIRE TANGARA, or SUMMER RED BIRD (*Pyranga æstiva*), is larger than the rest of its congeners, measuring from six and three-quarters to seven and a quarter inches in length, and eleven across. The body is red, like that of the last-mentioned species, but the wings are of a reddish brown, and the whole plumage somewhat paler. The female is olive green, shaded with brown, the under part of the body being yellow, towards the middle shaded with red. Very old females are occasionally met with, resembling the male birds in their colours. The young are like the mother.

In their manners both these species of Fire Tangaras are much alike; they inhabit the extensive forests of America, where they are found in pairs, living a very quiet and retired life, and generally perching upon the topmost branches of the trees. The Summer Tangara receives its name from the fact that it is only seen in the United States from May to September; though far from numerous, it is well known all over the country, frequently making its appearance in the gardens and plantations, where it does considerable damage to fruit and flax. The scarlet species is generally seen as early as April, and leaves somewhat later than the Summer Tangara. The latter migrates by day, the former at night, the birds rarely consorting even on these occasions, and preserving their comparative isolation when flying through the length and breadth of the land. As to their habits, naturalists agree in telling us that they are quiet and monotonous; but, whilst constantly deploring their deficiencies as birds of song, they cannot speak too warmly of their great beauty and of the striking contrast their red plumage affords to the surrounding trees. Their flight is smooth and gliding; but they seldom descend to seek their food upon the ground; their movements among the branches are slow, and the trifling amount of animation of which they appear capable is expressed by occasionally flapping their wings, or uttering their call, which consists of only two notes. They live principally upon insects, catching them when upon the wing, and Wilson mentions having found Tangaras whose stomachs were entirely filled with the remains of bees. The nest, which is clumsy in its construction, is usually built upon a forked branch, no care being taken for its concealment. The Prince von Wied mentions having seen a brooding female that remained sitting quite undisturbed by his approach, even when he ventured quite close to the young family; indeed, so little precaution is taken to ensure safety, that the nests are often constructed by the roadside, and so lightly fastened to the branches upon which they are built as to be easily shaken from their place; dry roots and straw generally form the outer wall, the interior is lined with fine grass. The eggs, four or five in number, are light blue, or dark greenish blue, those of the Scarlet Tangara being spotted with different shades of purple. Both sexes unite in the duties of incubation, sitting upon the brood for the space of a fortnight, and feeding the nestlings principally upon insects. By the beginning of June the young birds are strong enough to fly about the country, accompanying their parents until the season for migration arrives. Wilson mentions a pretty instance that came under his own notice of the attachment of these beautiful creatures to their young. On one occasion, he tells us, he caught a young Scarlet Tangara that had been a few days out of the nest, and carried it to a distance of about half a mile, when he placed it in a cage near the nest of a Yellow Bird, thinking that as the occupant had a family of her own, she might take pity on the stranger. In this hope he was deceived, its plaintive cries being entirely disregarded, nor could it be persuaded to take food from his hand. He had almost decided on taking the poor bird to the place whence it came, when towards evening a Scarlet Tangara was seen flying round the cage and making every effort to obtain admission; not succeeding in its attempts, the bird flew away, speedily returning with a beakful of food; this continued till sunset, when it perched for the night upon a neighbouring tree. At break of day its ministrations recommenced in spite of all the enmity testified by its neighbour the Yellow Bird, who tried to drive it from the spot. Several days and nights were spent in this manner, the parent urging the young one by every tender persuasion of which it was capable to leave its prison and accompany her. At last the cage was opened, and the little captive permitted to rejoin its mother, who received it with loud demonstrations of affection and delight. The Tangara is but rarely seen in Europe, and though easily reared upon fruit and seeds, is by no means adapted for domestication.

Under the name of CALLISTES (*Calliste*) we include a considerable number of small birds, somewhat resembling the Siskin and Linnet in appearance, but much more varied and brilliant in their hues. Their beak is comparatively short, high, and slender, its edges compressed, the upper mandible furnished with a horizontal ridge, and the tips slightly bent. The eyelids are surrounded by a circle of small flat feathers; the wings and tail are of moderate length, the latter slightly forked and covered with small feathers; the legs are delicate, the tarsus high, and the toes short. The plumage of the Callistes is variegated, the tints on the coat of the male being more distinct and pure than in the female; the young resemble the parents, but are paler in colour. These birds inhabit the wooded districts of Brazil, and are distinguished from other Tangaras by the fact that they subsist entirely upon various kinds of seed.

THE RED-NECKED CALLISTE.

The Red-necked Calliste (*Calliste festiva*), the most prominent member of this group, is a small bird, five and a half inches long, the wing measures two and a half inches, and the tail two inches. Its shape is slender and elegant, the feathers extremely soft and delicate, and the coloration of the plumage exquisite; the front of the brow, cheek-stripes, base of the under mandible, chin, and upper part of the beak, are black; the upper portion of the forehead and small feathers round the eye, a beautiful greenish blue; the rest of the head is a brilliant ultramarine. Around the eyes and under the lower mandible runs a broad line of splendid cinnabar red, which passes over the cheeks, the region of the ear, sides of the throat and nape. The rest of the plumage is principally of a bright glossy green, shading into yellow on the hinder part of the body; the wings are brownish black, the feathers being edged with a broad green line, and the shoulder marked with a streak of orange. The feathers of the tail resemble those of the wings, but are shaded with green; the beak is deep black, the feet slate colour or reddish brown. The coat of the female resembles that of her mate; the colours, however, are somewhat paler, and a portion of the back is spotted with black.

These birds, which are by no means numerous, inhabit the woods upon the eastern coast of Brazil, and are occasionally found in Guiana. We are entirely ignorant as to their life and habits.

The CALLOUS-BEAKED TANGARAS (*Ramphocelus*) are recognisable by their thick high beaks, that have the appearance of being swollen at the base, while the lower mandible is covered with peculiar coloured callosities, that extend as far as the angle of the mouth. The edge of the upper mandible is turned inwards, and its tip bent, presenting a very perceptible notch. The short wings do not extend as far as the middle of the tail, which is extremely long and abruptly graduated at the sides. The legs are small, the tarsi thick, and the claws hooked. The plumage of the male is much more brilliant and thicker than that of his mate.

THE TAPIRANGA.

The TAPIRANGA, or TIJÉ (*Ramphocelus Brasilianus*), the only species of this group to which we shall allude, is seven inches in length, and seven inches across the wings; the wings and tail each measure three inches. The female is somewhat smaller. The plumage of the male is thick and harsh, and of a light blood-red; the wings and tail are brownish black, becoming lighter as the bird advances in age; the feathers of the upper wing-covers are bordered with blood-red, the under covers being black, marked with white, the feet deep brownish grey. The fore part of the back and throat of the female are of a quiet greyish brown; the breast and entire lower portion of the body are a light reddish brown, the upper tail-covers tinged with blood-red, the wings greyish brown, edged with a paler shade, and the tail-feathers blackish brown. The beak of this species is without callosities, and the eyes pale red. The young male and female are alike in colour, but the plumage of the former is of a somewhat deeper shade, and there is a white skin on the lower mandible. In both birds the upper tail-covers are blood-red. During the time that the young are acquiring the red feathers their plumage has the appearance of being spotted.

The Tapirangas inhabit the Brazils, and there frequent such localities as are at no great distance from the banks of a river, or from marshy ground covered with reeds. In their native land these beautiful birds are very common. Except during the breeding season, their time is passed in flying about in small flocks, in search of berries and fruit, and they exhibit a very cunning preference for the finest and more valued kinds, such as oranges and citrons, to which they do great damage. Young and old are alike engaged in these foraging parties, and are only distinguishable by their cry, that of the old bird resembling the twitter of our Sparrows. In disposition this species is lively and restless, and by no means shy. The nest, which is placed upon the forked branch of a tree, is deep and semi-globular in shape, formed of moss, and delicately lined with fibres or blades of grass. The eggs, two in number, are of a beautiful sky-blue or apple-green, spotted with brown, and marked with black streaks at the broad end. The Tijé is unknown in mountainous regions.

The BUTCHER-BIRD TANGARAS (*Lanio*) are also recognisable by the formation of the beak, which is somewhat elongated; the upper mandible is hooked at its extremity, and possesses (what constitutes its greatest peculiarity) a strong tooth-like appendage situated near its apex. The wings are long, and the tail of moderate length, slightly forked.

THE BLACK-HEADED BUTCHER-BIRD TANGARA.

The BLACK-HEADED BUTCHER-BIRD TANGARA (*Lanio atricapillus*) is about five and a quarter inches long, and eight and a quarter across the wings; the tail measures two and a half inches, and the wings three inches. The plumage of the male is black upon the upper part of the body; the forehead, eyes, throat, and a line over the tail greenish brown, the under parts of a bright yellow, and the centre of the back and breast of a reddish shade; a white line passes over the wings. The coat of the female is greenish red, the head dark green, and the middle of the belly bright yellow.

These birds are numerous in Guiana, where they generally live in pairs upon the trees in plantations, or near the coast. D'Orbigny found them in small flocks, occupying the hot woods at the foot of the Bolivian Alps, and perching so high upon the branches as to render their capture difficult. Their food consists of seeds and the tender shoots of young plants.

The ORGANIST TANGARAS (*Euphone*) constitute another group. These birds bear a strong family resemblance to the True Tangaras, from which they have been separated on account of their possessing *two* tooth-like prominences behind the apex of the upper mandible. In their general habits, compact body, short tail, high tarsus, and short broad back, they seem closely allied to the MANAKINS (*Pipra*). They are small, thick-headed birds, with strong beaks, which are distinguished by the peculiarity mentioned above, and much compressed towards the tip. The wings are short, covered with narrow feathers, and do not reach beyond the root of the tail; their first three quills are of equal length, the tail is very short and narrow, and the individual tail-feathers rounded at their extremities. The plumage differs in the two sexes, the back of the male being of a blueish steel colour, inclining to green, and that of the female olive green; the lower parts of the body are brilliant yellow or light green. A most striking peculiarity in this species is the seeming absence of any proper stomach or gizzard, these being replaced by a simple spindle-shaped dilatation, resembling a crop, situated at the termination of the gullet.

The Organist Tangaras lead a solitary life, inhabiting the depths of forests, and living upon berries of various kinds; their nests are built upon thickly-foliaged trees or bushes; the eggs are very long, of a pale red colour, spotted with reddish brown at the broad end. Their voice is extremely pleasant and melodious, and capable of a great variety of notes. Our space does not permit us to mention more than one example of this group, and our readers must, therefore, take it for granted that all its other members are more or less similar in appearance and habits to the species we describe.

THE VIOLET ORGANIST.

The VIOLET ORGANIST, or GUTTARAMA (*Euphone violacea*), the bird we select to represent its kindred, is four inches long, and seven inches broad; the wing measures two and a quarter inches, and the tail one and a half inches. In the male the brow and the whole of the lower part of the body are bright yellow, the upper parts, from the forehead downwards, of a blueish violet; the wing-covers are shaded with a pretty green, as are the edges of the quills, the inner border of the latter being white; the upper side of the tail is blueish green, its lower surface black, and the two exterior feathers white upon the inner web and shaft. The female is of a sad olive colour upon the back, and yellowish grey underneath; the wing and tail feathers are brownish grey. The young birds resemble the mother; the second coat of the young male is greyish blue, spotted with yellow on the lower parts of the body.

We are but little acquainted with the habits of this species, though it is frequently caged, and is in all respects an elegant, lively little creature, hopping and flying with great animation, and possessing a full and agreeable voice. The Guttaramas subsist chiefly on fruit, preferring that of the orange, banana, or guava trees, to which they do great damage. In Guiana they are also extremely troublesome by reason of the injury they do to the fields of rice, over which they sometimes fly in small flocks.

The BRIGHT-COATED FINCHES (*Amadinæ*), a group to which we shall next call attention, comprehends many brightly plumaged, compactly formed, small birds, inhabiting Africa, Southern Asia, and Australia. They are distinguished by the absence of a hook at the end of their somewhat thick beaks; their wings are of moderate length, their tail is short and graduated, the two middle feathers often extending far beyond the rest, and their legs are comparatively weak. The males are much more brilliantly coloured than their mates, although the latter are by no means deficient in this respect, so that their gay presence lends an indescribable charm to the districts they inhabit. The song of these beautiful Finches is by no means equal to their external gifts, nevertheless they seem anxious to atone for all deficiencies by the zeal and industry with which they pour forth their notes throughout the greatest part of the year; their voices are extremely varied, some having a curious kind of song, that has the effect of being produced by ventriloquism. All parts of the country are frequented by these busy birds, who usually keep together in tolerably numerous parties. When flying, they dart along with the velocity of an arrow, beating the air rapidly with their wings—in short, whether upon the ground, hopping about among the bushes, or hanging like Titmice from the branches, they prove themselves at least the equals of any of their congeners. Their breeding season commences with the spring, though some species lay much later in the year; the brood consists of from three to six eggs, and the young are fed exclusively upon insects, which, together with a variety of seeds, constitute the food of the parent birds. The enemies of these pretty creatures are extremely numerous, man himself being first upon the list, in revenge for the mischief done to his fruit and corn. Some Falcons subsist entirely upon them, and a variety of other destroyers kill and devour them in large numbers.

THE GUTTARAMA (*Euphone violacea*).

THE BAND-BIRD.

The BAND-BIRD, or COLLARED FINCH (*Amadina fasciata*), well known in seaport towns, is the species we have selected for special description, as being a worthy representative of its race. Its beak is extremely strong, and nearly as high and broad as it is long; the upper mandible is somewhat flattened at its origin, and the ridge arched from the forehead; the lower mandible is very wide; the wings are of middle size, and the three first quills of nearly equal length; the tail is short, and rounded at its tip. The plumage is brown, spotted with a lighter shade, and prettily marked with black; the tail black, tipped with white. The entire length of this elegant little creature does not exceed five inches, the wing two and a quarter inches, and the tail one and three-quarter inches. The coat of the male bird is of a beautiful brown, darker upon the back, and lighter on the under part of the body, its whole surface being either undulated, or the feathers bordered with black. Upon the breast some of the individual feathers are marked with a black spot that takes the shape of the letter V. The upper wing-covers are terminated by a greyish-red patch, thrown into strong relief by a black crescent that divides it from the rest of the feathers. The wings are brown, edged with a yellow shade, and the tail pale black, the under portion being grey, and the outer web of the exterior feathers white; the other tail-feathers, with the exception of the two middle ones, are entirely black. The male bird is further distinguished from its mate by a broad band of rich carmine round the throat, which passes along the lower part of its white face and neck. The eye is brown, as are the beak and legs.

These birds are very numerous in their native lands; they inhabit the continent of Africa from east to west, avoiding the actual desert and primitive forests, as not affording the grasses and plants on whose seeds they mainly rely for food. In their habits they are social, and may frequently be seen flying over the country in parties that include not merely their own species, but many varieties of their feathered relatives. These flocks will often alight close to the huts of the negroes, without the slightest danger of repulse; and pass the entire day in searching for food upon the ground. Should the busy foragers be disturbed at their work, they rise at once to take shelter in some neighbouring tree, where they while away the time by preening their feathers and singing, until the supposed danger is over, when they return to the spot from whence they were driven. If attacked by a bird of prey, the whole party takes refuge in some thickly-foliaged retreat, to which they also resort during the mid-day heat to enjoy a siesta, thus protecting themselves from the burning rays of the sun; later in the afternoon they are again busy in the search for food. The breeding season commences in September or October, the months which in Africa correspond to our European spring. In the countries watered by the Nile these birds have only to dread the attacks of Falcons or Sparrow Hawks, for the natives are content to frighten them from their fields of corn without wreaking further vengeance upon them. It is remarkable that during the whole period of our residence in Africa we never saw one of them in the huts of the natives, although the great numbers exported to various parts of the world come exclusively from the tract of country watered by the Gambia. Hundreds of these "Bengalees," as they are called, make the long sea voyage shut up together in a wooden cage, and but scantily provided with nourishment; yet, in spite of this treatment, and the deplorable condition in which they arrive, they speedily recover health and spirits, appearing most grateful for any kindness shown to them. Few birds are more attractive than this species, or better adapted for domestication; indeed, the mutual attachment of the little couples will bear comparison with that of the proverbially affectionate "Love Birds:" every labour and pleasure is equally shared, the male scarcely allowing himself time for a song, so busily is he occupied in cares for his pretty mate and her offspring. This amiable disposition is, however, by no means exhibited in reference to other males, the little husband doing battle with all intruders with such vigour and pertinacity as to render it quite impossible to keep more than one pair in a cage—at least, during the breeding season. The nest is melon-shaped, and provided with a hole at the side for an entrance; it is built of grass or straw, snugly lined with wool. The brood consists of from four to five eggs, dotted with small spots; the young progeny are covered with down when hatched, and should be fed at first upon the yolk of eggs, and afterwards with seeds, softened as they would be in the crop of the parent bird. The breeding season commences in January, and continues until August, when the feathers are moulted.

The HOODED FINCHES (*Spermestes*) resemble the members of the last-mentioned group in the general shape of their bodies. The beak is short and thick, the upper mandible being furnished with a shallow furrow, and slightly curved towards its extremity. The wings are comparatively short, the first quill somewhat less than the second, which is the longest of all; the strong tail is abruptly graduated; the plumage is black upon the upper part of the body, white underneath, and very harsh, the whole coat being usually marked with band-like lines. The upper mandible is dusky, the lower somewhat paler. One of the best known species belonging to this group is

THE MAGPIE FINCH.

The MAGPIE FINCH (*Spermestes cucullata*) is a small bird, about three and a half inches long, the length of the wing being one and a quarter inches, and that of the tail thirteen lines. The plumage upon the upper part is a deep glossy brown, which is darkest upon the head and neck, and extends as far as the breast; the under part of the body is white; the rump, upper and lower tail-covers, and the sides of the belly are streaked with greyish white and dull black, and still further ornamented with a large dark shining patch of metallic green, situated upon the sides of the breast; the wings and tail-feathers are uniformly black, the under side of the quills being of a bright grey; the iris is brown, the upper mandible black, the lower mandible whitish, and the feet black. The Magpie Finch is an inhabitant of the countries in the vicinity of the river Gambia, but of its history when in a state of freedom we are quite ignorant.

Slight and uncertain as is our knowledge of the AUSTRALIAN FINCHES, it would be impossible for us to pass them unnoticed, for what trifling information has been acquired respecting them shows them to be as remarkably distinguished by their beauty or peculiarity of form as are most of the animal and vegetable productions of that "land of contrarieties;" many of them, indeed, vie with the American Tangaras in the gorgeousness of their plumage.

The REED FINCHES (*Donacola*) are recognisable by their short thick beak, which bulges out at its base, and has the ridge much elevated; the wings are comparatively short, their three first quills being longer than the rest; the tail is short and rounded, the two exterior feathers being of equal length; the tarsus is long, and the plumage striped and banded, with a dark tint on the upper part of the body, its under portion being similarly marked, but with a lighter shade.

THE CHESTNUT REED FINCH AND THE DOUBLE-BANDED REED FINCH.

The CHESTNUT REED FINCH (*Donacola castaneothorax*), and the DOUBLE-BANDED REED FINCH (*Donacola bivittata*), two species of this group, have been brought repeatedly to Europe within the last few years, thus rendering us somewhat familiar with their habits. These birds closely resemble each other in their general appearance, and in their length, which is about four inches. The head and upper part of the throat are dark grey; the cheeks, throat, and ear-covers blackish brown; the upper part of the body reddish brown, and the upper tail-covers orange or tawny; the tail is reddish brown, edged with a paler shade; the breast is decorated with a broad, light, chestnut-coloured circlet, which is enclosed upon its lower portion by two black lines; the breast, belly, and under tail-covers are white, striped with black. The Double-banded Reed Finch is found near Moreton Bay, where it lives upon the banks of rivers, passing its time among the reeds, very much after the manner of our Bearded Titmouse (*Calamorphilus biarmicus*), which it resembles in the activity of its movements.

The DOUBLE-BANDED FINCH is distinguished by the size of the black spots upon the cheeks, which reach as far as the breast; moreover, the chestnut-coloured circlet upon the breast is broader, and separated from the light-coloured belly by a broad black line.

Little is known of either of the above species in their native state. When caged they are lively and contented, but require to be kept in pairs, as it is only then that their affectionate dispositions can be fully appreciated. Song they have none, and their monotonous and prolonged call has not even purity of sound to recommend it

Both these Finches breed and moult in the months corresponding to our autumn and winter. In confinement they may be reared upon almost any small seeds, with a little green food as an occasional variety.

The second Australian section comprehends the group of the GRASS FINCHES (*Poëphila*). The beaks of these birds resemble those of the Hawfinches, being very deep at their base, and almost as broad as they are long; the wings are of moderate size, their first quill shorter than the rest, and the four succeeding ones of equal length; the wedge-shaped tail is abruptly graduated, and its two middle feathers considerably elongated.

Another very similar race of these Australian birds has been separated from this group by Reichenbach under the denomination of CHAFF-FINCHES (*Chloëbia*), on account of the peculiar formation of the tail, which is short and wedge-shaped, the two middle feathers standing out in the old bird, and terminating in a bristle-like appendage; the difference of plumage is also striking, the coat of the Grass Finch being light brown, with very prominent lines, of a darker or lighter shade, passing around the body, while the Chaff-finch is of a bright green above, but yellow underneath, and has a broad line upon the breast.

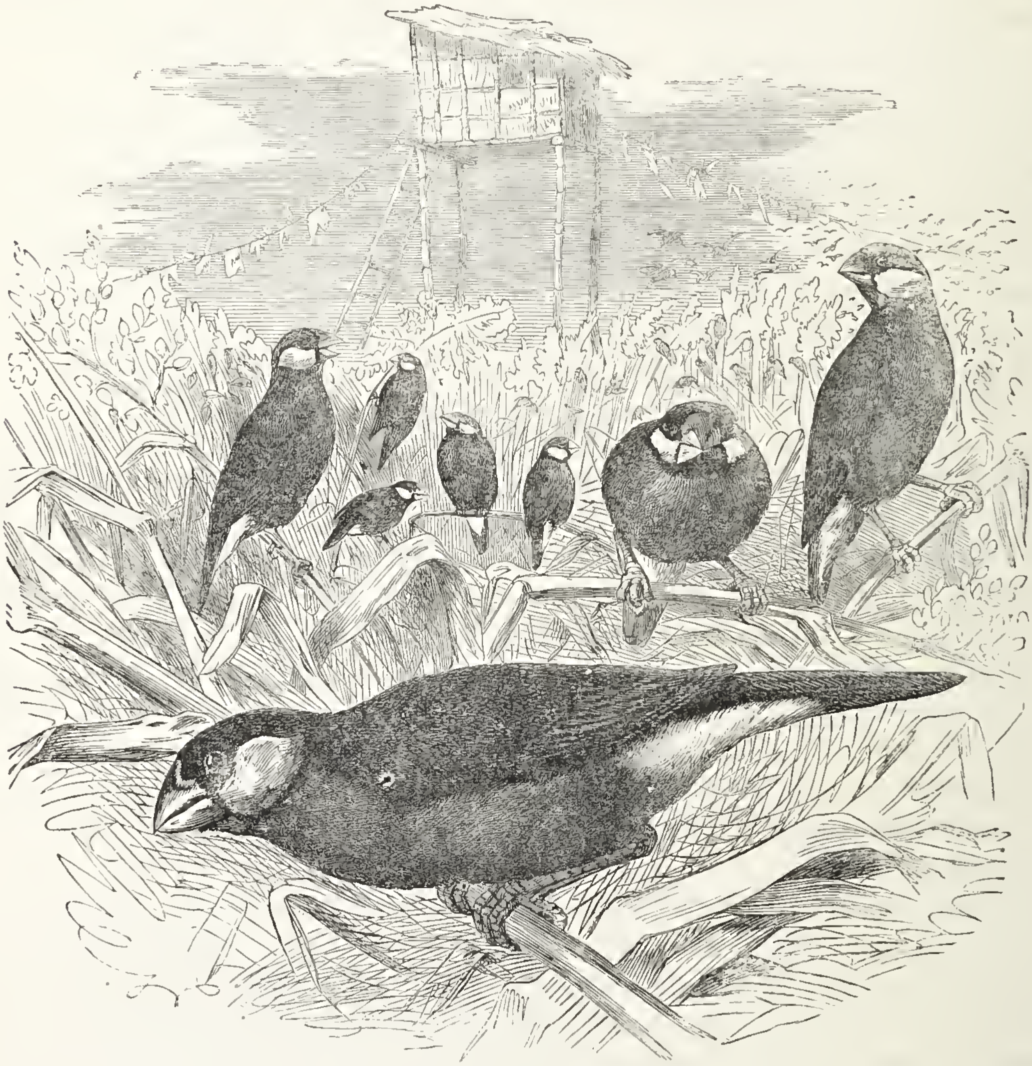
THE ADMIRABLE CHAFF-FINCH.

The ADMIRABLE CHAFF-FINCH (*Chloëbia mirabilis*) is the species we select for description, being a bird of surpassing brilliancy as regards the coloration of its plumage. The top and sides of the head are bright red; the throat black, as are the edges of the feathers at the back of the head; the neck is surrounded by a line of sky-blue, which is narrowest in front, and white on the nape, where it shades into a yellowish green, blending with the mantle, which is of the green usually seen in Parrots. The rump and upper tail-covers are pale blue, the quills of the wings bordered with yellowish brown; the exterior tail-feathers light blue, whilst those in the middle are dark grey or black. On the lower part of the body the sky-blue ring around the throat is bordered with a broad line of lilac, which, increasing in size, passes over the breast, and is separated from the yellow belly by a narrow line of orange. The female resembles her mate, but is rather paler, and the middle tail-feathers are shorter than in the male.

This magnificent creature was first seen in the vicinity of Raffles Bay, Australia, but only three specimens were obtained, and no information acquired as to its habits. Macgillivray tells us that the CHLOËBIA GOULDII is only this species in another coat, and mentions having seen a flock of them in the neighbourhood of Port Essington, no two of which were alike in plumage, the greater number not having arrived at their full beauty; many still retained the black or partially black feathers on the top of the head, whilst in some this part was of a beautiful red, thus making it evident that these two birds, which had been considered as distinct species, must now be looked upon as one and the same. In their habits the Australian Finches are like the rest of their congeners, frequenting such parts of the country as are covered with reeds, and situated at no great distance from the banks of a river, seeking for seeds upon the ground, and climbing up and down the reeds with the dexterity of Titmice. They are sometimes seen in flocks, but are not as social as the rest of their family; they show no fear in their intercourse with man, and are constant visitors to the fields and gardens, occasionally taking more or less lengthy excursions over the surrounding country. Their nests are described as differing much in construction, some resembling those of Bottletits, being placed among reeds, whilst others are built on trees in the immediate vicinity of the eyries of birds of prey. Gould mentions having seen one of these nests placed partially within the gaping hole of a tree that had been selected as the home of a family of WEDGE-TAILED EAGLES (*Uroaëtos sphenurus*), and tells us that the little male was perching without any sign of fear on the same branch as his formidable but certainly very friendly neighbour.

THE RICE BIRD.

The RICE BIRD (*Padda oryzivora*), one of the largest of the Asiatic Finches, constitutes, with one or two others, a group distinguished by their strong beaks, which are nearly straight, forming at their origin almost a right angle with the forehead, and furnished with a slight ridge in front of the nostrils. The wings are of moderate length, the two first quills being considerably longer than the rest; the individual quills that form the short and rounded tail are of unusual breadth; the plumage is grey or brown, with white patches upon the cheeks. In China these birds have always been called by the name that still distinguishes them, from the fact that they subsist in great measure upon "Padda," or rice that is still in the husk; and Chinese artists from the earliest times have thought them objects worthy of being constantly painted upon porcelain and rice-paper. They were not known to Europeans until about a century and a half ago, but at the present day are exported from Asia in great numbers. The plumage of the Rice Bird is grey, the wings of a somewhat deeper shade, and the sides lightly tinted with rose colour; the cheeks are of a pure white; the quills grey, with a dark border, and



THE RICE BIRD (*Padda oryzivora*).

of a silvery whiteness on the under side; the tail is entirely black; the eyes brown, the eyelids red; the beak a bright rose colour, edged and tipped with pearly white; the feet are reddish. Many varieties of plumage are found among the members of this group, some few of them being entirely white.

The Rice Birds are found all over Southern Asia, as also Java and Sumatra, and are very numerous on the former of these islands. Like our Field Sparrow, they inhabit the agricultural districts, frequenting woods, gardens, or bushes, from the month of November until March or April—during which time the fields of rice are under water—and subsisting upon such seeds and small fruits, insects or worms, as they can glean from the shrubs or bushes; but no sooner does the water disappear, and the rice begin to ripen, than they leave everything to attack it, and would do incalculable damage were not prompt means taken by the natives to protect themselves against their ravages. As an effectual means of scaring away these feathered thieves small watch-towers are erected upon bamboo poles, placed in the rice-fields at no great distance from each other; connected with these little buildings are numerous strings and thin slips of bamboo, to which are attached a profusion of large dry leaves, dolls, wooden clappers, and similar objects, the whole of this grotesque network being agitated from time to time by a native perched within the tower, like a great spider in the centre of its web, who thus produces a series of gymnastic performances by the dolls, and such noises with the clappers as are sufficient to frighten the boldest trespasser. Even after harvest-time is over, abundance of food is procured by these gleaners from among the stubble in the rice-fields, in which thousands of ears lie buried, this supply being still further increased by the incredibly rapid growth of innumerable weeds, that spring up in all directions when the rice is cut, and soon furnish a rich banquet of quickly ripened seeds. At this season the Rice Birds are fat and delicate, and the young especially are much sought after, as affording a dainty dish to the inhabitants of the country, and a source of amusement to their children, who drag them about the streets fastened to the end of a long string, as a sort of living toy. The nests of these birds are built of grass, and placed sometimes on the summit of a tree, sometimes among the creeping plants that cover its trunk; in the former case, they are usually of large size, and in shape like the half of a sphere, whilst under the latter circumstances they are much smaller, and more irregular in their construction. The brood consists of from six to eight brilliantly white eggs (see Coloured Illustration, Plate IV., Fig. 7), about nine lines in length. In its disposition the Rice Bird is quarrelsome, and its feeble notes are quite unworthy of being called a song.

THE LITTLE GOLDBREAST.

The **Little Goldbreast** (*Pytelia subflava*) will furnish us with the best type of the STRIPED FINCHES, whose distinguishing characteristics are the long and pointed beak, slightly vaulted at its roof, its origin being nearly at right angles with the forehead; the length of the second quill of the wings, and the short and rounded tail. The plumage of the upper part of the body is of an olive-green or greyish tint, somewhat lighter beneath, and delicately striped upon the sides of the body. In size the Goldbreast does not exceed from three and a half, to three and three-quarter inches, the span of the wings five and a half inches, the length of the wing two and a half, and of the tail one and one-sixth inches. The plumage is more varied in colour than in others of its family; the entire upper portion of the body is olive green, and the hinder part brownish red; a red line passes over the eyes, the throat is white, the upper part of the breast and under tail-covers orange, the sides of the belly greyish olive, marked with white crescent-shaped spots, and its middle lemon yellow; the tail is black, and the feathers edged with white at their extremities; the back and legs are red.

We are entirely ignorant as to the habits of these birds when in their native lands, and can only inform our readers that when caged they are very attractive little creatures, manifesting great attachment to each other, and associating readily with other Finches. Their voice is gentle, and not unpleasing in its sound.

THE BLOOD FINCH.

The Blood Finch (*Lagonosticta minima*) is a species fully equalling that above described in its claims to our notice, and represents a group recognisable by their comparatively long and compressed beaks, rounded tails, and red plumage, marked with small white spots. This species, which is known to dealers in birds as the "Little Senegal," is about three inches and a quarter long, and five and a half broad, the wing-covers measure two inches, and the tail one inch and a half. The coat of the male is very beautiful, both in its hues and markings. The upper part of the head, nape of the neck, back, and wings are dark brown, shading into black upon the tail; the face, front of the throat, breast, and rump are bright red; the belly light brown, and the vent light grey; the breast and hinder part of the body are marked with minute spots, the beak and feet are red, the eye brown. The coat of the female is greyish brown, of a lighter shade upon the lower part of the body, the rump is red, spotted on its sides with white. The young resemble the mother.

In its native lands the Blood Finch occupies a similar place to that of the House Sparrow with us, and at certain seasons of the year may be found in great numbers in all the villages of South Nubia and Eastern Soudan, flying in enormous flocks over the surrounding country, and occasionally occupying the steppes at a great distance from the abode of man, or living upon mountains at an altitude of 400 or 500 feet above the level of the sea. The habits of this elegant and bright little bird closely resemble those of its congeners, none of whom exceed it in lightness or agility, either when flying, or hopping among the branches with its companions, whose society it cultivates even during the period of incubation. By the time the dry season is over it has moulted, and at once proceeds to choose a mate and undertake the care of a family; the little couples may then be seen going frequently down into the villages and streets to examine the straw houses or mud huts of the natives, in order to find a suitable spot upon which to build their nest, which is merely a heap of dried grass thrown roughly together, the only care being expended in making the interior compact and round. Occasionally, when no better place is to be found, the birds have to content themselves with a tree, or are even reduced to make the cradle for their young upon the ground. We ourselves, in the month of January, when near the banks of the Upper Nile, were upon one occasion attracted by the anxious cries and restless movements of a female Blood Finch, as she hopped about, evidently trying to divert attention from her nest; after a short search we found it in the midst of a heap of grass, from which it was scarcely distinguishable; it contained a number of small, white, round eggs, with a very smooth shell. The work of incubation extends over a considerable space of time, and many broods are laid in the course of the year. When caged this bird is very docile; and its song is both lively and pleasing. The male and female are extremely attached to each other, and alike occupy themselves in making the nest and rearing their offspring, usually sitting upon the eggs for about a fortnight; the young when first hatched, are covered with a brownish down instead of feathers, and are fed by the parents with half-digested corn, insects, caterpillars, and other larvæ. As far as we have ascertained, all attempts to naturalise these birds have been unavailing, because they continue to breed and moult during the same months as in Africa, and find our cold winter quite unendurable under these circumstances.

THE VARIEGATED FINCH.

The Variegated Finch (*Emblema picta*) may be regarded as the Australian representative of the last-mentioned bird, and is particularly remarkable for its long, conical beak. Its wings are of moderate length, the first quill being much shorter than the rest, and the four next of equal length;

the tail is somewhat rounded at the sides. The colours of this species are extremely striking; the top of the head, and the whole of the lower part of the body, wings, and tail are brown; the face, throat, and wings bright red; the upper mandible black, whilst the lower one is scarlet, and marked with triangular black spots towards its base; the feet are light red. We are indebted to Gould for the discovery of this beautiful creature, but unfortunately he was only able to procure one specimen, and learnt nothing as to its life and habits—indeed, had he not succeeded in making a painting of it, we should never have been acquainted with this species, as the bird was stolen soon after being stuffed.

THE STEEL FINCH.

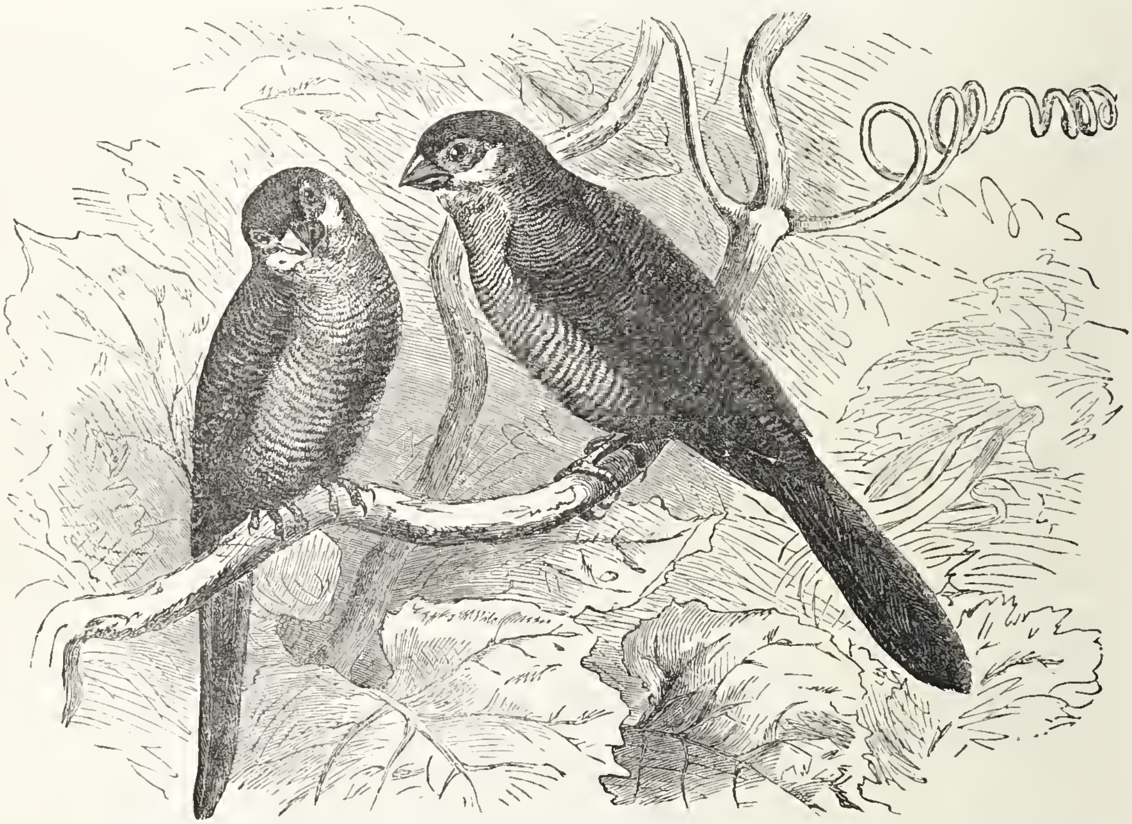
The Steel Finch (*Hypochera ultramarina*) frequents the banks of the Nile, and represents a distinct group, with one species of which (*Hypochera nitens*) Europeans are familiar. This bird, like its well-known relative, is distinguished by the following characteristics: a compact body, short tufted tail, the exterior feathers of which are somewhat rounded, and wings of moderate length, reaching half way down the tail; the beak is short, conical, and vaulted; the nostrils are furnished on each side with bristles of considerable length. The plumage varies with the age of the bird or season of the year, that of the male being black. The feathers of the *Hypochera nitens* are shaded with green, those of the *Hypochera ultramarina* with bright blue. In the female the body is light brown, the feathers being edged with reddish yellow, the breast, belly, and under tail-covers are white, the eyebrows of a red shade, as is a streak that passes over the head. The male bird assumes a similar plumage during the dry season. This species measures rather more than four inches, the wings two inches, the tail one inch and four and a half lines.

The Blue Steel Finch is found chiefly in Dongala, spread over the whole face of the country, inhabiting the steppes, or seeking its food in the native villages with equal impartiality; its favourite haunts, however, are those wells and pleasant places selected as resting-places by the many caravans of travellers passing through their domains, the débris from whose dinner or supper afford a plentiful repast, which is rapidly appropriated by these elegant and industrious little creatures, who, meantime, exhibit their graceful attitudes and attract constant attention to their varied movements. The period of incubation extends from January until March; the nest is built upon a tree, and is a mere heap of grass. We are unacquainted with the appearance of the eggs. No sooner are the young birds fledged than the whole company associate themselves with the Fire Finches, and fall in masses upon the fields of *durrah*, thereby drawing down upon themselves the hatred of the natives, who use every means in their power to drive them from the spot, employing for this purpose a contrivance similar to that we have already described in our account of the Rice Bird. The Blue Steel Finch is never caught for purposes of domestication, but large numbers of the Green species are captured annually on the western coast of Africa, and exported to Europe and America.

THE BUTTERFLY FINCH.

The Butterfly Finch (*Mariposa phœnicotis*) is a species found constantly associated with the birds above-mentioned. Its body is lengthy and slender, its tail long and wedge-shaped, and its beak, which is extremely broad and high, placed at a right angle with the forehead. The first quill of the wings exceeds the rest in length. The plumage of this bird is very thick and silky; the whole of the upper part of the body is grey, the face, breast, sides, and upper part of the centre of the tail a bright greenish blue, the belly and under tail-covers dark grey, as is the under portion of the tail. The cheeks are marked with a vivid red spot, the beak is pale red, and the feet flesh colour. Both sexes are alike in plumage, except that the female is without the red spots upon the sides of the face. This bird is four and a quarter inches in length, the breadth across the wings six and a quarter inches, the length of the wing is one inch and five-sixths, and of the tail one inch and three-quarters.

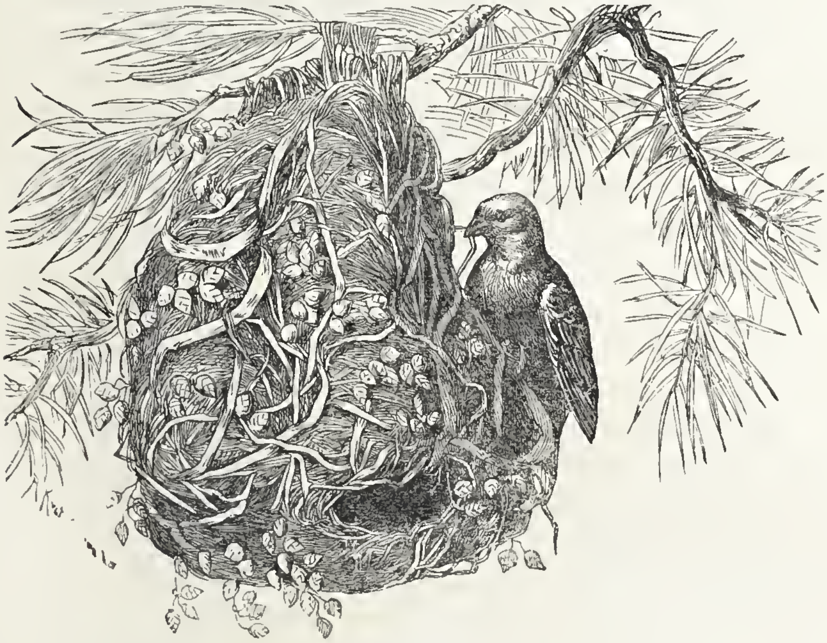
The Butterfly Finch inhabits the greater part of the continent of Africa, flying over the country in small parties, that rarely become much increased. The nest, which is seen both during the rainy and dry seasons, is placed upon a low bush, and resembles a rough bundle of hay rather than a cradle for the young. The eggs, from four to seven in number, are long and of a brilliant white. We are told that this species will occasionally steal into a Weaver Bird's nest to deposit its eggs, but cannot speak positively as to the truth of the statement. This elegant Finch, better known upon the Continent as "*Cordon Bleu*," is lively and restless in its habits, and the attachment testified by one little mate for the other renders them extremely attractive when caged. The only care necessary for their successful rearing is to keep them constantly in a warm atmosphere.



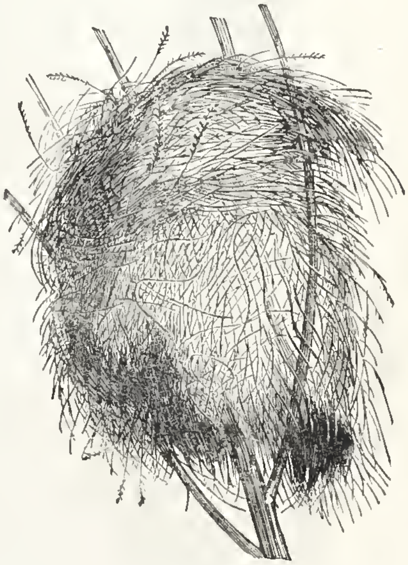
THE PHEASANT FINCH (*Astrilda undulata*).

Next in order to the preceding we place the ASTRILDS (*Astrildæ*), as closely resembling them in many particulars, the body being slender and the tail wedge-shaped; but the beak, although almost as high and broad as it is long, rises with a decided curve towards the brow. The plumage is very silky, delicately coloured, and marked with a series of undulating lines. Europeans are familiar with two species of this group—the GREY ASTRILD (*Astrilda cinerea*), and the PHEASANT FINCH (*Astrilda undulata*). The coat of the former is brownish grey, lighter upon the lower part of the body, or almost imperceptibly shaded with dark wave-like markings; the tail is white, and its exterior feathers white upon their outer web; the bridles which in this bird pass around the eyes are of a blood-red, as is the beak; the feet are grey. The plumage of the Pheasant Finch is of a brownish grey, fading upon the throat into greyish white; the lower part of the breast and sides of the belly are tinged with rose colour, and the outer web of the exterior tail-feathers are light grey, striped with a deeper shade. In other respects this bird resembles the Grey species; both are alike in their size, which does not exceed four inches.

The whole of Southern and Central Africa is graced by the presence of these beautiful creatures, the "Little Pheasants" generally occupying such parts as are thickly wooded, and flying about the country in small flocks, perching when in need of rest upon the bushes, from which they descend to seek for seeds upon the ground. These birds are extremely common in Natal, where we are told they devour great numbers of winged termite ants, pursuing them in the same manner as that practised by the Flycatchers. The nest of the Astrilds has been described as melon-shaped, and closed at the top; it is placed in beds of high grass, and built of fine leaves or stalks stoutly woven together, and hanging loose about the exterior. The eggs, four or five in number, are carefully tended by both parents, who sit alternately. As far as we can ascertain, the Pheasant Finches do not migrate, but may be found living for years in the same districts. In disposition they are very attractive, and this, combined with their beauty and rather pleasing voice, will account for the large numbers that are captured and exported to Europe.



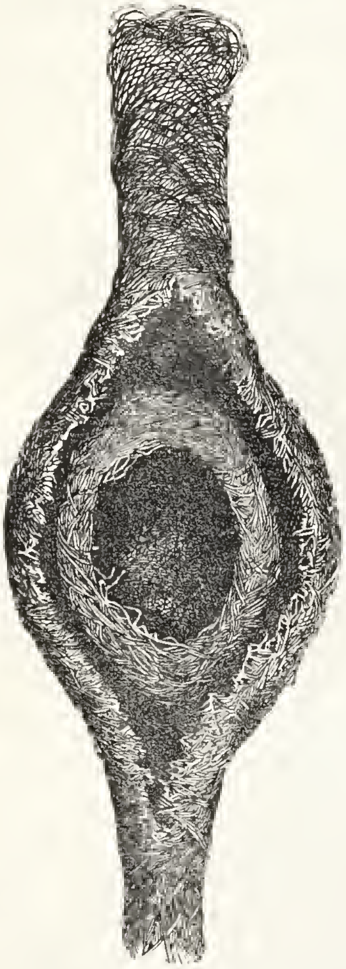
DETACHED NEST OF MALE GOLD-FRONTED WEAVER BIRD (*Oriolinus icterocephalus*).



NEST OF ASTRILDA, FROM SENEGAL.

We are now about to enter upon a description of one of the most remarkable groups of African birds, the strange forms of whose very varied nests are no doubt familiar to many of our readers. It would be difficult to imagine a more beautiful sight than that presented by a settlement of these most artistic WEAVERS, their nests hanging not singly, but by dozens, from the branches of a tree, which is generally selected with a view to being in the immediate vicinity of water. So strong and firm is the work of the little architects that the rain and blasts of years will not shake their abodes from their foundations, and it is by no means uncommon to see a tree thickly covered with the consecutive labours of many generations, and literally bending under the weight of these curious and elegant constructions. The central and western parts of Africa are particularly resorted to by these birds, also long accounts are given us of their abundance in Java and Madagascar.

WEAVER BIRDS.



NEST OF WEAVER BIRD SLIT OPEN.

THE WEAVER BIRDS (*Plocei*) are large Finches, with bodies somewhat elongated, having slender, or in some cases, short broad beaks, long wings, tails of moderate length, and very bright coats, the latter often varied during the breeding season by a peculiar kind of plumage. Yellow and yellowish red are usually the principal tints in the coloration of the feathers; but species are found in which black, red, white, or grey predominate. The head and face are generally dark, the back greenish or yellowish red, the lower part of the body dark yellow, or of a light or dark red. Like other Finches, the Weaver Birds are extremely social, living, as we have said, in large settlements during the period of incubation, and flying over the country in company with thousands of their feathered brethren during the remainder of the year. Immense damage is done by these swarms to the fields over which they pass, and about which they remain until the time comes for returning to their old breeding-places. Shortly after the moulting season the work of building commences, and several months are generally occupied in diligent labour before the newly-constructed homes will suit the requirements of the fastidious owners, who frequently tear a whole nest to pieces, and entirely recommence their labours, rather than rest content with a performance that is not quite satisfactory. The nests of the various species of Weaver Birds differ considerably in their shape and general structure, some building a detached residence (see p. 165), in which the male luxuriates, whilst his spouse is busied with the cares of her family; others, again, are so large as to contain numerous compartments, the whole colony working so close together as to form, not many separate nests, but one large establishment (see p. 168). Fibres, slender twigs, or blades of grass, are the materials usually employed in the construction of these edifices, the whole being woven tightly together, after having been rendered more flexible and adhesive by an application of saliva from the little artist's beak. The greater number of such settlements are formed of nests containing merely the chamber for the young and the apartment arranged by the male for his own occupation. Some males, however, build separate nests for themselves Both are represented in our engravings.

Many tribes of Africans tell wonderful tales about these creatures and their homes, some of which border upon the marvellous. The Malays have a saying that "He who can remove a Weaver Bird's nest without breaking it, will find a golden ball within;" and there is a popular belief in Africa that the lumps of clay so often found in these little dwellings are employed by the tenant as a kind of candlestick in which it fastens the fire-beetle it is supposed to employ to light its tiny apartment by night. The Weaver Bird lays many times during the year, and feeds its somewhat numerous family upon insects; these latter, combined with various kinds of seeds, also constitute the food of the parents. In spite of the injury done to the fields, but few precautions are taken by the natives to protect themselves against the depredations of these ingenious architects, who might live out the full term of their natural life were it not for the attacks made upon them by their numerous enemies, who are ever on the watch around their habitations. Our engraving (p. 175) represents the manner in which the monkey, one of the most formidable of their foes, obtains its prey. It is in hope of baffling the attempts of such unwelcome visitants that the Mahali Weaver Birds insert thorns with the points outwards into the walls of their nests, thus enabling the occupants to rest quietly, without fear of seeing their young carried off by snakes and other intruders. Large numbers of these curious and interesting birds are annually exported and sold at low prices, so that our readers need have no difficulty in witnessing their constructive powers, which are often displayed to great advantage in a cage. One of the most celebrated of this group is

THE SOCIAL WEAVER BIRD.

The Social Weaver Bird (*Philetairus socius*) stands alone in the peculiarities that distinguish it from its congeners. This species is recognisable by its conical and elongated beak, which is somewhat compressed at the sides; its upper mandible rises into a slight arch, and is furnished at its edges with a tooth-like appendage; the wings are of moderate length, scarcely extending beyond the root of the tail: their first quill is much shorter than the succeeding four, which are of equal length; the tail is rounded at its extremity. In this species, as in the whole family of Weaver Birds, the tarsus is strong and high. The plumage is extremely simple: the top of the head, sides, and front of the neck and breast are of uniform deep grey; the upper part of the head marked with dark spots; the nape and back grey, with undulating lines of black; the wing-covers, quills, and tail-feathers deep brown, edged with light grey; the feathers on the sides of the belly are blackish, bordered with a paler shade; the region of the beak and a small spot over each eye are black; and the beak and legs horn colour. Its length is about six inches and nine lines, and the wing measures rather more than two inches and ten lines. The female is known by the paler colour of the back, and the young by the brown tints upon the head; the latter are without the black spot upon the lower mandible and sides of the body.

It is generally considered that the Social Weaver Bird never crosses the Orange river, though how far it may penetrate in a northerly direction has not as yet been ascertained. Patterson, who wrote at the end of the last century, mentions having seen mimosa forests densely inhabited by these birds, who congregate in the hope of preserving their eggs from the numerous snakes. For this purpose, hundreds of them build their nests beneath one large roof, resembling a thatched house in its appearance. This roof (see p. 168) is fixed to a large branch or portion of the tree, and under it the actual nests are placed so closely together that it would be quite impossible for a snake or any other enemy to penetrate to the interior. All day long the busy crowd of workers hurry to and fro, resembling a swarm of bees in their industry, and, like them, return laden with everything needful for the construction or improvement of their homes, while year by year the settlement increases in size, until at last the tree literally bends beneath the weight of the superincumbent colony. The entrances to the interior are very numerous, and situated underneath the massive edifice, each opening leading to a kind of corridor or street, on both sides of which are the small and very secure apartments provided for the young. These birds subsist upon the seeds of the grasses employed in the construction of their dwellings. The above account has been verified by Mr. A. Smith, a well-known traveller and naturalist, from whom we learn that each couple works at its own portion of the building, all co-operating, however, in the common endeavour to concentrate the nests under one substantial straw thatch, and thus ensure the safety of the whole flock. These aerial cities are generally built upon large branches at a considerable elevation, but the Tree Aloe is occasionally selected as affording suitable support. The brood of the Social Weaver Bird consists of three or four blueish-white eggs, marked with small brown spots at their broadest end. The young are fed entirely upon insects, which are only occasionally eaten by the parents.

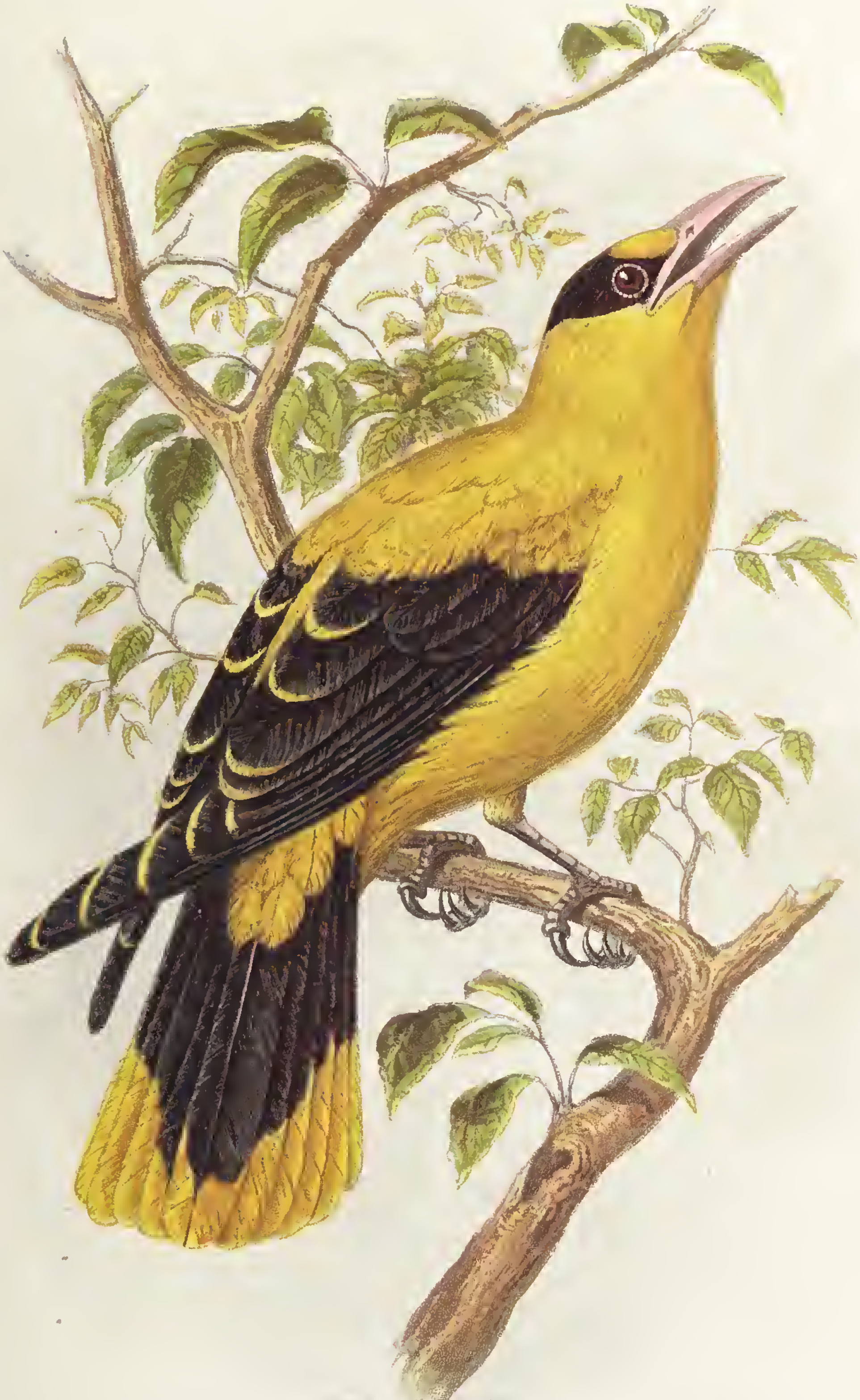
THE GOLDEN WEAVER BIRD.

The Golden Weaver Bird (*Ploceus galbula*), the type of a numerous group, is an inhabitant of Eastern Soudan. This bird and its congeners are all slenderly formed, and of moderate dimensions, possessing a slightly curved and shallow beak, the base of which appears to join the forehead at an acute angle; the feet are strong, the wings moderately long, reaching past the tail-covers; the tail is of medium length, and abruptly rounded; the third, fourth, and fifth quill-feathers are the longest, the first being rudimentary. The adult male is a most beautiful creature, the top and sides of its head, and all the lower portion of its body, being of a bright lemon colour. The region of the eyes, and the parts around the lower mandible are bright red; the back and wing-covers a brilliant green, with darker shafts to the feathers; the quills and tail are reddish brown, bordered with yellowish green; the iris is reddish brown, the beak black, and the feet yellow. In the female the forehead is of a greenish yellow; the back of the head, nape of neck, and mantle bright green; the shafts of the feathers are of a deeper shade; the throat is a dirty white, the upper mandible deep brown, the lower one somewhat paler. The young male resembles the mother, but is distinguished by the dusky yellow upon its throat.

NEST OF MAHALI WEAVER BIRD.

NEST OF SOCIAL WEAVER BIRD
(*Philetaërus socius*).

The Golden Weaver Bird is common in Abyssinia and the surrounding countries, where it may be often seen flying about in company with its congener the Green Weaver Bird, but never joining with it in the construction of a settlement. In their habits these birds are closely allied to other Finches, and are lively, active, and extremely social. At such times as the work of building the nests or rearing their young is not going on, they generally congregate in large flocks, and perch



From Cassell's Book of Birds.

THE SHARP-BILLED ORIOLE Oriolus [illegible]

[illegible]-fourths life size.

on the very summits of the trees, pouring forth their song for the delight of the female part of the community, until they are inclined to go in search of food. About noon all is hushed, for at this time the cunning Weavers are going down to drink, an operation requiring the greatest circumspection and care, as their enemies the Falcons are peeping at them over the trees, and ready to pounce upon them at a moment's notice. They now assemble in the bushes near the water side, frequently to the number of some thousands, where they scream and chatter much after the manner of our Sparrows. Suddenly, with one swoop, the little creatures reach the desired stream, take a hasty draught, and are back again to the thickets before their much dreaded foes have time to recover from their surprise and follow in pursuit. This proceeding is repeated some ten or a dozen times during the hour that is devoted to quenching their thirst, before they again commence their search for food. When the labours of the afternoon are over, all again return to the favourite tree, to sing their songs, and sleep away the night. In Soudan the moulting season commences about July or August, and after that is over the flock are employed in making long excursions until the period of incubation returns. Most species breed twice in the year. The following description of the Golden Weaver Bird's nest was written some years ago upon the spot, where we were fortunate enough to have opportunities of observing the manner of its construction:—The operation is commenced by placing long blades of grass at equal distances from each other, and fastening them together with so much exactness that a kind of framework is prepared, in which the form of the edifice is plainly discernible. The next step is to make the walls, by weaving in long straws; great care being taken to lay them in a downward

THE GOLDEN WEAVER BIRD (*Ploceus galbula*) AND THE MASKED WEAVER BIRD (*Ploceus larvatus*).

direction, and thus render the roof water-tight. At this stage the beautiful fabric presents the appearance of a cone, placed upon the half of a ball. An entrance to its interior is next obtained by constructing a long tubular passage, extending downwards from a hole at the side, quite to the bottom of the nest, to the exterior of which it is firmly attached. The interior is lined with soft stems of grasses, and very frequently the birds may be seen employed upon this wonderful structure, even after the eggs have been laid; these latter, from three to five in number, are at first white, then red, and only gradually acquire their green colour. From Heuglin we learn that the male undertakes the principal labour of constructing his own abode, and that he may frequently be found building it, as though in anticipation, at times when he has no especial need of a nest. As far as we could ascertain, the care of brooding devolves entirely upon the female; she is, however, assiduously tended by her mate, who likewise shares her toils when the time comes for feeding the nestlings. This latter duty is performed so diligently that scarcely a minute elapses between the arrivals of the parents bringing supplies to satisfy the gaping young; they hang upon the lower part of the nest, thrusting in their heads and placing the morsel into the outstretched beaks of their hungry progeny. At such times, when the nests are numerous and placed closely together, a settlement of Weaver Birds can be compared to nothing but a bee-hive, as the inhabitants perpetually fly backwards and forwards in one unceasing bustle and confusion. These birds are occasionally, but very rarely, brought to Europe.

The BAYAS (*Nelicurvius*). The members of this remarkable group inhabit the whole of Southern Asia, including the neighbouring islands, and are characterised by the formation of the beak, which is somewhat prolonged, with the ridge vaulted, and joining on to the forehead almost in a straight line. The wings, of which the fourth quill is the longest, are of moderate length, the tail is short, the feathers being of equal size and sharply pointed, the tarsus strong, and of medium height; the coloration of the plumage is by no means bright.

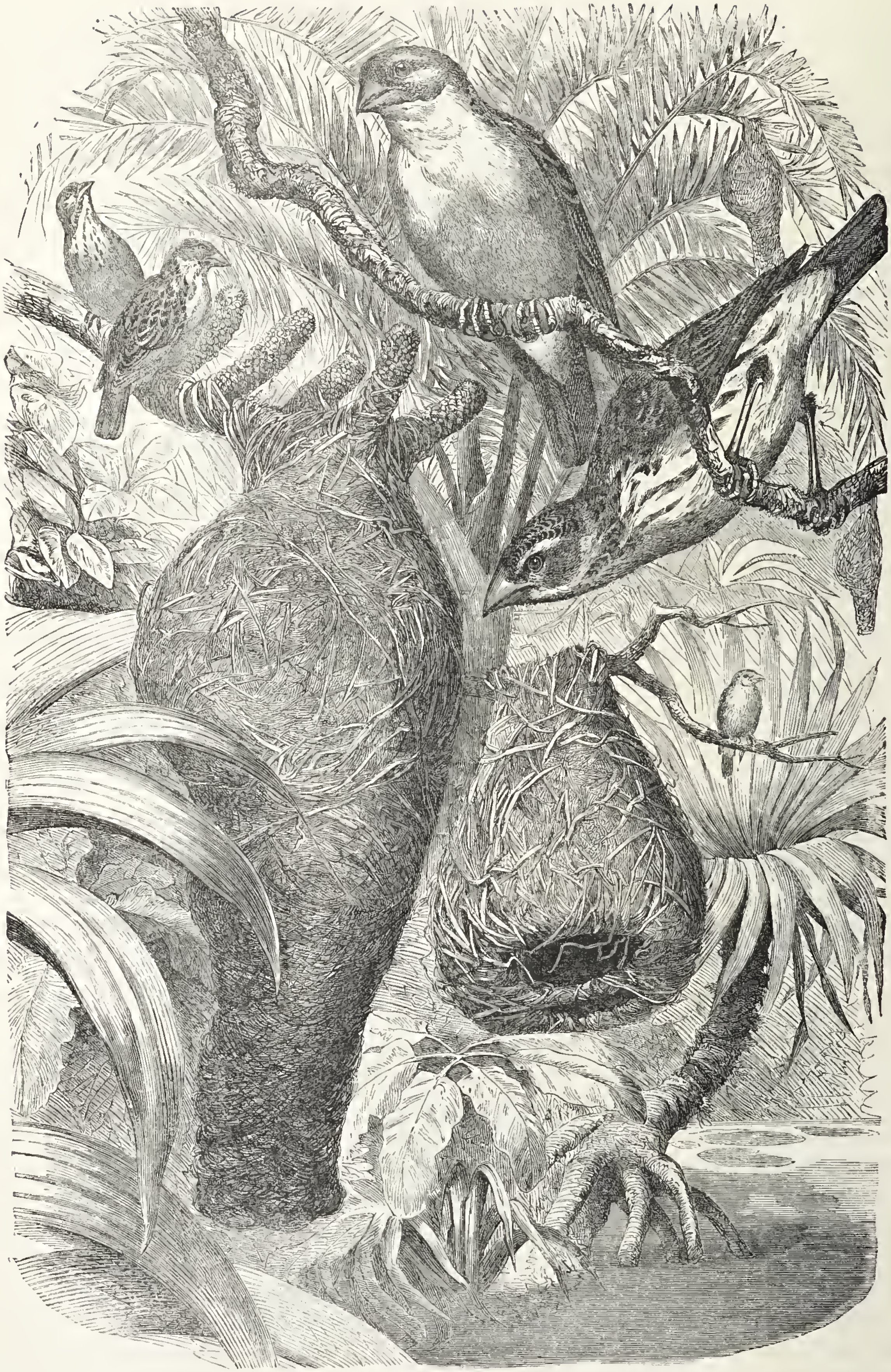
THE BAYA.

The Baya (*Nelicurvius Baya*), the most celebrated of the race, is of a dark brown upon the upper portion of its body, and all the feathers, particularly those of the wing and tail covers, are bordered with yellowish white; the breast is marked with light brown, the shafts of the feathers being of a deeper shade. The face and front of the throat are black, the top of the head bright yellow, and the primary quills edged with a narrow yellow line. The female is without the black and yellow upon the head, the eyebrows are pale, the breast and chin of a whitish shade. The winter coat of the adult male is like that of the female; in the young male the breast is pale red. The beak is horn colour, the iris brown, the feet flesh coloured, the eye dark blue. The length of this bird is six inches, and its breadth nine and a half inches; the wing measures two inches and four-fifths, and the tail two inches. This species is found extensively throughout India, Assam, Burmah, and the Malayan peninsula, frequenting woodlands in large numbers; it is much more rarely met with in the highlands of the Deccan. Corn, rice, and various kinds of grass-seeds constitute its principal food, but we have never been able to ascertain from our own observation that it will eat fruit. The Bayas breed during the rainy season, which occurs between April and September, according to the locality, and associate freely with other species. Their very curious nests, which in shape resemble a retort, are models of neat and compact architecture: these structures are generally hung from the branches of palms, or other trees, and in India we have never seen them elsewhere; in Burmah, on the contrary, it is not uncommon to find them suspended from the eaves of houses, or from the huts of the natives, some twenty or thirty in a row. On one occasion we observed not fewer than a hundred of these strange appendages hanging to the roof of one house, and the little occupants living on excellent terms with their human neighbours; it is, therefore, very remarkable that this same species in some places should occupy the most quiet and isolated situations, only visiting such districts as are but little frequented by man. The walls of the Baya's nest are composed of blades of grass, gathered while still green, or of strips of leaves, frequently those of the palm-tree, woven carefully together, the shape of the little edifice varying according to circumstances or the taste of its owner. As soon as the chamber allotted to the eggs is fully completed, the bird proceeds to build a partition wall, thus forming a second apartment, supposed by some naturalists to be the especial property of the male, whilst others imagine that it is only intended to separate the entrance passage from the cradle of the nestlings. The entrance is tubular, and is very strongly and firmly constructed, being destined to serve as the favourite sitting-room of the whole family, when the young birds have acquired sufficient strength. No sooner is the second chamber of which we have spoken completed than the female, who has hitherto worked with her mate, retires into the part designed for her eggs, and occupies herself in weaving together the fine grass with which the interior is lined, the materials for the work being brought to her by the male bird, who alone continues the building of the passage and exterior portions of the nest. When this part of the work is concluded, the little artisan proceeds to carry in the lumps of clay, about the use of which so many opinions have been expressed. The natives assert that to these pieces of clay the male affixes fire-flies, to illumine the interior of the nest. Layard imagines them to be employed by the little builder as a whetstone whereon to whet its beak, whilst we ourselves are of opinion that they serve merely as a means of weighting the structure as it hangs suspended in the air, and have many times remarked that an unfinished nest contained more clay-balls than one that was completed. Very various accounts are given as to the number of eggs that form a brood; we have never found more than three, and feel sure that in cases where six or seven have been discovered two females must have occupied the nest. Young Bayas are frequently tamed, and form a most interesting and attractive addition to an aviary.

The CRIMSON-BEAKED WEAVER BIRDS constitute a separate group, distinguished by the unusual height and depth of their beak, which is nearly equal to two-thirds of its entire length; in shape it is slightly arched, and compressed towards its edges. The wings reach to the middle of the tail, which is short, but slightly graduated and rounded at its extremity; the plumage is brownish, spotted on the lower portion of the body when the bird is young, becoming at a later period of a yellowish or reddish shade.

THE CRIMSON-BEAKED WEAVER BIRD.

The CRIMSON-BEAKED WEAVER BIRD, or DIOCK (*Quelea sanguinirostris*), is about four inches and ten lines long, and seven inches and ten lines broad; the wing two inches, the tail rather more than one inch. The iris is brown, the beak brownish red, and the feet pale red. The plumage of this species varies considerably, according to the time of year. During the breeding season, the coat of the male is chiefly of a yellowish red; the face, forehead, cheeks, and throat black, the mantle appearing of a greenish brown, mingled with a black shade that shines through from the shafts of the feathers; these latter are edged with a red tinge; the wing and tail feathers are black; the exterior web of the quills bordered with lemon colour. The female and young birds are without the black upon the face. Very shortly after the breeding season the male dons his winter coat, in which the throat and belly are of a dirty white, and the breast and sides of a dull yellow, all the feathers having faint lines upon their shafts. The whole of the upper part of the body is a dark greenish grey, the feathers of the mantle and nape of the neck being bordered with yellow; the tail is brownish grey; the third, fourth,



THE JAVA WEAVER BIRD (BAYA), AND NESTS.

and fifth quills, and the five exterior tail-feathers are gold colour, the rest of a paler shade. The male is without the black face during the winter months.

The Queleas must be regarded as by far the most numerous of the race of Weaver Birds. In Soudan they are met with in enormous flocks, and are certainly the commonest of the feathered inhabitants of Central and Western Africa. We ourselves have seen twenty-seven brought down at a single shot. The habits of the Diocks resemble those of other Weavers, but, unlike most of them, they fly over the country, or perch upon the river banks in flocks that number several thousands, many of which are of other species. When in confinement these birds will carry on their building operations with great industry, employing coloured thread, if given to them, as a substitute for other materials. We have, moreover, been told that feathers, yarns, and worsteds of brilliant hues are much preferred for this purpose, and that the designs constructed from them are sometimes extremely beautiful, but we cannot vouch for this from our own experience. Reichenbach speaks of their manners in a way that is by no means flattering. He tells us that the Crimson Beak is a most quarrelsome, restless creature, and quite unfit to be placed in a cage with other birds of smaller size,

BREEDING-NEST OF THE GOLDEN-FRONTED WEAVER BIRD (*Oriolinus icterocephalus*).

whom it never ceases to torment in every conceivable manner; one very favourite method being to seize its companion by the tail, and hold it thus suspended in the air for several seconds, the tormentor meanwhile uttering cries expressive of its own enjoyment of this, for a bird, very original pastime. It will sometimes only relinquish its hold when the victim has successfully counterfeited death from this cruel treatment. If not quite in the humour for such *active* amusement, the Crimson Beak contents itself with pulling out the feathers of its playmates, who never seem to dream of opposing force to force, and quietly submit to all its persecutions. When confined with others of its own species, it is but little more conciliatory in its manners, squabbles and fighting appearing to form the principal diversion of the males, and even the females are not always exempted from the disagreeable results occasioned by the decidedly eccentric tempers of their mates. Their nests are suspended from the topmost branches of trees, and are constructed of various dry materials woven together while rendered flexible by the moisture sprinkled over them by the birds, who use their claws when fastening down the various parts, the beak at the same time doing its full share in carefully smoothing and arranging the fibres into a proper state of neatness and order. The little couple work together, apparently quarrelling the whole time; the male usually appropriates to himself the business of constructing the exterior, while the female is busy within, and the flexible stems employed being passed from one to the other. The nest when completed is round in shape, the front, where the entrance is situated, being somewhat straighter than the rest; the whole fabric resembles a nicely padded willow basket. The birds work for not more than three or four hours at a time, but so industriously that only about eight days are occupied in building their wonderfully beautiful home.

The TAHA may be selected as an example of a group of Weaver Birds distinguished by their black plumage. These birds have a few Abyssinian congeners also called Taha; in all of them the body is compact, the wings and tail small, and the beak short, strong, and conical; the upper mandible being slightly arched. The wings reach to the middle of the very short tail; the first quill is almost rudimentary, the third longest of all; the tail-feathers are of nearly equal length.

THE TAHA.

The TAHA (*Taha dubia*) is of a beautiful bright yellow upon its head, back, shoulders, upper and lower tail-covers, and hinder part of the body. The wings and tail are a blackish brown, and all the feathers bordered with the same tint; the rest of the plumage is black; the female and young male during the winter months are blackish brown above and light grey beneath, some of the feathers having deep grey shafts, while others are edged with reddish brown. The length of this elegant little bird is about four inches, of which only one belongs to the very short tail. This species is a native of Southern Africa, and is seldom found farther north than the centre of that continent. During the breeding season it seeks refuge in the fields of corn or reeds, to the stems of which it hangs its purse-shaped nest. In its habits it resembles the Fire Finches, which we are about to describe.

The FIRE FINCHES (*Euplectes*) constitute one of the most brilliant of all the many beautiful groups of Weaver Birds. Few sights that meet the eye of the traveller in the regions watered by the Nile are at once so striking and so splendid as that presented by a flock of these glowing creatures, as they dart in masses over the green fields of *durrah*, looking, when the sun sheds his rays upon them, like a multitude of aerial flames, appearing and disappearing almost with the rapidity of lightning, as they rise into the air or take refuge among the corn. The little creatures seem quite conscious of the admiration excited by their beauty, for they open and close their wings, turn themselves in every direction, and pour forth their pleasant song, as if fully appreciating the attention of a stranger.

THE FLAME-COLOURED FIRE FINCH.

The FLAME-COLOURED FIRE FINCH (*Euplectes ignicolor*) in the construction of its body closely resembles the Taha, from which, however, it differs entirely in the colour of its plumage. The coat of the male is extremely soft, and its whole surface, except the wing and tail feathers, of a bright black or fiery red. Except during the breeding season the male and female are alike dressed in a modest garb of brown, which is so completely changed when pairing time arrives as to differ not merely in colour, but in the softness and texture of the feathers; the wings and tail alone remaining unaltered. When clothed in all its glory the male bird is black upon the top of the head, the cheeks, breast, and belly; the other parts of the body being bright red; the wings exhibit a brownish shade, owing to the somewhat paler edges of the feathers. During this season the tail-covers become of such unusual length as almost to conceal the tail. The eye is brown, the beak black, and the feet brownish yellow. The body of the female is brown above, and of a yellowish shade beneath; a yellow line passes over the eyes, and the feet and beak are horn coloured.

NESTS OF SOUTH AFRICAN WEAVER BIRDS.

The Fire Finch inhabits the whole country from the middle of Nubia to the interior of Central Africa, preferring such places as are in the vicinity of man, frequenting fields of corn, and only taking up its quarters in beds of grass or reeds when other accommodation is not attainable. A field of *durrah* is a veritable Eden to these birds, who cause much injury to the natives, often completely destroying the crops, in spite of the many devices employed to scare them away; for these bold-hearted little thieves are not to be deterred from their work of destruction either by the dancing of dolls or rattling of clappers. The Fire Finch exhibits great activity; when amongst the corn it resembles a Reed Sparrow rather than a Finch in its movements, as it climbs up and down the stalks, or hides itself among the grass. When the period of incubation is over, and the harvests are gathered in, the fields that have afforded them food are deserted, and some time is then passed in flying about the country, after the manner of their congeners. This species of Weaver Bird can scarcely be said to form settlements, each couple building somewhat apart from the rest. The nest is constructed of stalks and blades of grass woven so loosely together that the little brood are often visible through the lattice-work of their cradle, which is either placed upon the ground in a bed of grass, or fastened to the higher stalks. Considerable difference is observable in the size and shape of these nests, some being long, some round; few, however, exceed seven or eight inches in length, and five or six in breadth. Our illustration represents the *Euplectes Petiti*, a very similar species to that just described, except that the whole of the lower part of the bird is black.

THE FIRE FINCH (*Euplectes Petiti*).

The BUFFALO WEAVER BIRDS (*Textor*) constitute a group well deserving our notice, and are distinguished by their large size, thick, conical beak, which is unusually thick at its base, long, abruptly-rounded wings, and slightly rounded tail.

THE RED-BEAKED BUFFALO WEAVER BIRD.

The Red-beaked Buffalo Weaver Bird (*Textor erythrorhynchus*) is the species of this group with which we are most familiar. This bird is from eight and three-quarter to nine and three-quarter inches in length. Its plumage is black, the front feathers of the upper wing-covers and quills being bordered with white; the beak is pale red, the foot light brown, and the eye dark brown.

THE ALECTO BUFFALO WEAVER BIRD.

The ALECTO BUFFALO WEAVER BIRD (*Textor Alecto*) resembles the last-mentioned species in the colour of its plumage, but is easily distinguishable from it by the difference in the shape of the beak. Its feathers are soft and brilliant, some of those under the wings and upon the sides being occasionally nearly white. The eyes are brown, the beak yellow, tipped with blue upon its extremity and edges, the feet are of a dirty grey. Its length is almost the same as that of the species last described.

DINEMELLI'S BUFFALO WEAVER BIRD (*Textor Dinemellii*).

THE DINEMELLI BUFFALO WEAVER BIRD.

The DINEMELLI BUFFALO WEAVER BIRD (*Textor Dinemellii*), as the third member of this group has been called, is a native of Abyssinia. This species is white upon the head and lower portion of the body; the mantle, wing and tail covers are chocolate colour, each feather being edged with a lighter shade; the shoulders, rump, and tail-covers are marked with small scarlet spots; the bridles are black, the beak a dirty deep blue, the feet dark blue. The body measures about seven inches, the wing four inches, and the tail two inches.

All the foregoing varieties of Weaver Birds resemble each other in their mode of life, and must certainly be reckoned as the most remarkable members of their family, for though Finches, they have many features in common with the Thrush, and their nests resemble those built by Magpies rather than such as are made by other Weaver Birds. The three species we have mentioned alike frequent pasture land, keeping as much as possible in the immediate vicinity of the herds of buffaloes, upon whose backs they perch, to obtain the ticks that form their principal nourishment; they may constantly be seen around these huge creatures, to whom they not only render this service, but warn them of the approach of danger. Strangely enough, these birds confine their attentions entirely to the buffalo, whilst their constant companion, a species of Buphaga, renders the same service exclusively to the rhinoceros. The Black Weavers are by far the least numerous members of this trio, their settlements rarely including more than about eighteen nests, which are built upon some large tree, and are remarkable for their size, if we consider the dimensions of the bird by which they are constructed. The nests, which have a very beautiful exterior, are formed of slender branches and twigs; those of the Garat Mimosa being frequently employed, in spite of the thorns with which they are armed; these materials are woven carelessly together, and the whole fabric, some three or four feet in diameter, is so lightly constructed that the eggs are often visible through the sides of the nest. The interior is lined with delicate fibres and grass, the entrance being an opening large enough to admit a man's hand at one end, while at the other is a hole so small as to allow nothing larger than the birds themselves to pass through. We learn from travellers in Africa that the nests of this species are occasionally found of a much larger size than those described, some measuring from five to six feet in length, and four to five in breadth and height; these enormous structures, however, are not occupied as a residence by one family, but are joint property, some containing as many as from three to eight distinct nests, in each of which may be seen the three or four white eggs, spotted with brown, that constitute the brood. As may well be imagined, the noise and bustle around one of these compound nests must be heard to be appreciated; indeed, the vicinity of a settlement is unmistakably proclaimed by its busy and loud-voiced proprietors. The Black Buffalo Weaver Bird breeds at very various seasons of the year, the time depending on the part of the continent that it inhabits. Its flight is hovering, very light, and produced by a slow motion of the wings, which at each stroke are raised high towards the back. When upon the ground it runs with ease, and is most adroit in its movements among the branches of the trees to which it resorts.

THE WHYDAH OR WIDOW BIRDS.

THE WHYDAH OR WIDOW BIRDS (*Viduæ*) form the group to which we shall next allude, as being most nearly allied to the family of the Weavers. Whether the members of this family have had the name of *Widow* bird assigned to them by reason of the blackness of their plumage, is a question we shall not attempt to decide; some naturalists affirm that the word *Widow* is merely a corruption of *Whydah*, the name of the place from which they were first obtained by the Portuguese. These birds are Finches of moderately large size, remarkable from the fact that the plumage they acquire during the breeding season is distinguished by the peculiar form and great length of a portion of the tail-feathers, this decoration being laid aside as soon as the period of incubation is over, and replaced by another of less striking appearance. The other distinguishing characteristics of this family are the short, conical, and pointed beak, somewhat dilated at its base and compressed at its tip, and the wings of moderate length. The plumage of the male is black above, intermixed here and there with white and red; the lower part of the body is red, gold colour, or white. All the various species of *Viduæ* are to be met with throughout the entire continent of Africa, though some countries in particular might be mentioned as the actual homes of certain members of the group. In their habits the Widow Birds bear a closer resemblance to the Buntings than is usually observable in the Finch tribe; they live during the breeding season in pairs apart from the rest, or else not unfrequently in a state of polygamy and only congregate in large flocks and fly about the country after the period of incubation and the moulting season are over. As may be easily imagined, the movements of these beautiful birds are greatly influenced by their change of plumage; the long tail necessitating a slow and stately motion, especially when upon the wing, and often causing its possessor to be driven hither and thither at the pleasure of the wind; when perched, the sweeping tail hangs straight down, but is borne aloft when on the ground; no sooner, however, has the moulting season gone by than the Widow Bird appears to be quite another being, hopping and flying over the country with the same activity that characterises the Finches. Most species of this group seek their food principally upon the ground, generally subsisting upon grass-seeds and various kinds of insects: they pass a considerable portion of the breeding season among the branches, as affording the most convenient situation for the bestowal of their streaming tails, whilst some are found almost exclusively inhabiting the reedy parts of the country, where they also carry on the work of incubation. The breeding season is in the spring time of the African continent. In Soudan the eggs are laid about the month of August, and in Abyssinia some months earlier. The nest closely resembles those of the Weavers. The Widow Bird is rarely brought alive to Europe, and though of a pleasing disposition, and well qualified to live in a cage, is almost entirely destitute of song. The first members of this group to which we shall call attention have been named

The MOURNING WIDOWS (*Coliuspasser*). In these birds the beak is long, compressed at its sides, slightly bent towards the tip, and appears to rise at a right angle from the forehead; the wings are of moderate length, the first quill much shorter than the four succeeding ones; the feathers of the tail are considerably broader at their extremities than at the base, the middle ones being the longest. The plumage is black, with red or yellow upon the head, breast, nape, and shoulders.

THE YELLOW-SHOULDERED MOURNING WIDOW.

The Yellow-shouldered Mourning Widow (*Coliuspasser flaviscapulatus*), an inhabitant of Abyssinia, is a bird about eight inches in length, of which the tail measures four and a half inches; the wing does not exceed three and one-third inches. The coat of the male is deep black, the shoulders yellow, and the wings and tail edged with yellowish white. The plumage of the female is principally of a brownish yellow, lightest on the throat and darkest upon the head, which, owing to the deep colour of the feathered shafts, has a slight appearance of being striped. The wings and tail are dark brown, and the shoulders greenish yellow. The breeding season commences about August; the nests are somewhat deep, built of large dry straws, and entered through a long tubular passage or small opening, protected by a kind of roof. The male is provided with a second nest, placed near to that containing his family, and furnished with two entrances. The eggs have a reddish-white shell, marked with rose-coloured spots and streaks, lying most thickly together at the broad end, and so minute as almost to escape notice.

THE LONG-TAILED WIDOW BIRD.

The Long-tailed Widow Bird (*Chera caffra*), the largest of all the South African species, is remarkable for the peculiar construction of its tail, formed of sixteen imbricated feathers of great but unequal length. The plumage is of a velvety black, scarlet upon the shoulders, the latter colour being divided from the wing by a pure white line; the wings are black, the feathers being bordered with light yellow; the beak and feet are of a pale brownish yellow. In the coat of the female all the feathers are bordered with a yellow margin, only the middle being black; the lower portion of the body is greyish yellow; the throat, eyebrows, and under tail-covers are white. The length of this large bird is not less than twenty and a half inches, the longest tail-feathers measuring fifteen and a half inches, and the wing five and a half inches.

The Long-tailed Widow Bird is social in its habits, and must certainly be reckoned amongst the races that are polygamists, as it is by no means uncommon to see flocks containing about eighty females to not more than ten or fifteen males. As with our Barn-door Fowls, some of the old females acquire the plumage of the male. Marshes and bogs afford the breeding-places preferred by this species. The nest, which is round, is generally suspended from a reed, and formed of some green plant, the entrance to the interior being effected by means of a long passage, opening on the side that is nearest to the water. Travellers assure us that the male may be caught with the hand during windy weather, as its long tail renders escape by flight impossible.

THE PARADISE WIDOW BIRD (*Vidua paradisea*).

The COCK-TAILED WIDOW BIRDS (*Steganura*) are found throughout the whole of Central Africa, and have been described as two distinct species, resembling each other in the shape of their beak, the height of which equals its length; the ridge is arched, and joined at a sharp angle with the forehead. When in nuptial plumage the tail of the male seems to consist of only the middle feathers, which are much longer than those at the sides, and very various in their appearance; the centre feathers are bent like those in the tail of a Cock, and of great length and breadth, narrowing somewhat towards the tips.

THE PARADISE WIDOW BIRD.

The PARADISE WIDOW BIRD (*Vidua paradisea*) is black upon the head, back, and tail, brilliant red upon the nape and lower parts of the body. The plumage of the female is brownish yellow upon the head, the bridles and two lines upon the top of the head being black, the breast rose colour, as are the borders of the black wings. The length of the body is about five and three-quarter inches, the tail eleven and a quarter inches, its breadth nine and a half inches, and the wing two inches. The female is somewhat smaller than her mate.

The Paradise Widow Birds are found principally in the thinly-wooded forests of Africa, and appear to avoid the vicinity of man, flying about woodland districts in pairs or in small parties. Their gala dress is donned during the rainy season, and is retained for about four months. The process of moulting occupies but a very short time, and the long tail-feathers grow with great rapidity. They are often brought to Europe in considerable numbers, and are sometimes known under the name of "Birds of Paradise." The song of this species is extremely simple, but not unpleasing; it is never heard except during the period of incubation, and ceases when the beauty of the plumage has disappeared.

THE AMERICAN FINCHES.

The American Finches include a great number of species called, not inappropriately, Bunting Finches (*Passerella*), from the fact that the plumage presents markings very similar to those seen on our Buntings. They are characterised by a slender, conical beak, somewhat arched at its roof, and straight towards its tip; the wings are of moderate size, with the secondary quills of unusual length, the tarsus high, the toes long, and armed with large claws, those of the hind toes resembling spurs. Some species are essentially inhabitants of woodland districts, and carefully avoid the more open country; some confine themselves entirely to well-watered regions, or river banks; and others, again, frequent the sea-shore, open fields, and pastures, or replace our House Sparrows in their relation to man and his domestic life. We must, however, content ourselves with the mention of but a few principal members of this extensive group.

THE WHITE-THROATED OR SONG SPARROW (*Zonotrichia albicollis*).

The WHITE-THROATED SPARROWS are inhabitants of North America, while the MORNING FINCHES, on the contrary, occupy the southern portion of that hemisphere. Both species have been classed under the name of *Zonotrichia*. These birds are furnished with a slightly conical beak, the upper mandible of which is straight and somewhat pointed, the corners of the mouth bent downwards, the lower mandible almost equalling the upper one in height. The wings are of moderate length, reaching as far as the upper tail-covers; the tail itself is of middle size, and formed of small feathers; the tarsus is high, the toes long, and furnished with large claws but slightly bent. The plumage is soft and thick. Both species closely resemble the European House Sparrow in their habits, living in and about the villages, and subsisting upon various kinds of seeds, which they search for on the ground. Their nests are built in the neighbouring trees, upon which, also, they generally pass the night.

THE WHITE-THROATED SPARROW.

The White-throated or Song Sparrow (*Zonotrichia albicollis*) is six and a half inches long, and nine across the wings, the female somewhat smaller; the upper part of the head is of a dark brown and black brown, intermingled with a mixture of black and grey, and divided by a light greyish-brown stripe, marked with dark and light spots; a similar whitish-brown stripe passes over both eyes, towards the back of the head, and under this is a dark brown streak running in the same direction; the cheeks and lower part of the throat are ashy grey, the upper portion and chin white, divided from the dark grey tint beneath by a black line. The mantle is of a reddish grey, the feathers being marked with black streaks; the shoulders and wing-covers are blackish brown, the lower portion of their feathers bordered with reddish brown, and their end tipped with yellowish white, forming two irregular light borders to the wing. The throat of the female has less white upon it, and the wings are not so profusely marked with yellow.

The White-throat is found throughout the whole of America: Audubon tells us that it is a constant summer visitor in Louisiana and other Southern States, seldom, however, remaining longer in those parts than from March to September; but in the more central provinces it would seem to prolong its sojourn to a later period. No sooner do these welcome visitors arrive than every hedge and fence is alive with them; they form parties consisting of some forty or fifty birds, and fly down from time to time upon the surrounding district in search of food; hopping gaily about as they peck the small grass-seeds that constitute their principal nourishment, and hurrying back to their perch at the first intimation of danger. Nothing can be more amicable than the terms on which they seem to live; the time between their excursions over the field is passed, not in noisy strife, but in pouring forth a constant flow of song, so sweet as to please the ears of the most indifferent or unmusical listener. At early dawn the little community is roused by a peculiar shrill warning cry, somewhat resembling the syllable "twit;" this we have heard uttered during the night, when no doubt it is intended as an intimation that all is well. Should the day be warm, the whole flock seek shelter in the woods, and disport themselves upon the branches of the wild vine, rarely, however, flying to any great distance from their usual haunts. With the first approach of spring the States are deserted for the more northern portions of the continent. Richardson found the nest of this bird, in the month of July, under the trunk of a tree that had fallen, and tells us that it was formed of grass, with a bed of feathers and hair in its interior; on his approach the mother bird did not fly away, but ran noiselessly over the ground in the manner of a lark, thus leaving the eggs, which were green, spotted with reddish brown, fully exposed to his view. The White-throated Sparrow is a plump little fellow, and often becomes extremely fat, the latter quality adding materially to the value in which its flesh is held as an agreeable article of food, not only by man but by Sparrow-hawks and other enemies. When caged, the voice of this bird is heard in its full sweetness, and it continues during the entire spring and summer to sing, even until night has set in, as is its habit in its native land.

THE MORNING FINCH.

The Morning Finch (*Zonotrichia matutina*), as the Brazilian species has been called, is eminently distinguished for its powers of song. In size it is somewhat smaller than its North American brother, not exceeding five and a half inches in length: its appearance much resembles that of our Reed Bunting: the head is grey, striped with black; the nape of the neck a rusty red; the back brown; the feathers have a light tip, and their shafts broadly marked with black; the throat is white, with a streak of black at the sides.

Large numbers of these birds frequent the villages of South America, and pass the day seeking for food, like our Sparrows, from amongst the offal in the streets, perching at night and early morning upon the roofs of the houses, and pouring forth their sweet enlivening song. The nest, which is large, and usually placed in a bush in some neighbouring garden, is built of dry straw, hair, or feathers, and is generally found to contain four or five greenish-white eggs, marked very thickly with spots of a light red colour. Other species are met with in North America and in Asia.

We have selected another North American species as the type of a distinct group of Bunting Finches (*Spizella*), the members of which are recognisable by their conical beak, compressed at its sides, which curve slightly inwards; their wings are of moderate length, the third quill being the longest. The tail is but slightly excised, the feet large, and the legs covered with small scales; the plumage is soft, but not particularly striking in its hues.

THE TREE BUNTING FINCH.

The Tree Bunting Finch (*Spizella Canadensis*) is rather more than eight inches long and eight inches across, the wing and tail each measuring rather more than two inches. In the plumage of such birds as have attained their full beauty, the top of the head is of a light reddish brown; the mantle is of the same colour intermixed with black; the quills greyish brown, bordered with yellow, and the wings surrounded by two white lines; the chin, throat, and lower part of the neck are a light grey, the breast and belly greyish white, shaded upon their sides with yellowish brown, and marked with a deeper tint. A light grey stripe passes over the eyes towards the back of the head; the iris is greyish brown; the beak blackish brown upon the upper mandible and tip of lower one, the remainder of the latter being yellow; the feet are of a deep flesh colour. The female closely resembles her mate in plumage; but the young are by no means so brightly tinted as the parent birds.

The Tree Bunting Finches are met with in large numbers throughout North America, though they will not breed in every locality that they frequent, the more northern portions being, we believe, preferred for that purpose. Like most of their congeners, these birds pass the winter months in flying about the country in company with Buntings and a variety of other Finches, seeking food upon the hedges and trees, whose seeds constitute their principal nourishment, and sheltering themselves during very severe weather by creeping into such low bushes as are thickly surrounded with long grass or dry plants, thus affording a defence against the keenness of the wind. They generally arrive in the more southern States at the commencement of winter, and gradually disappear as spring returns. The breeding season is in May, and during that time they frequently attain a power of song of which they are incapable when not inspired by the wish to attract the attention of their mates, whose favour they endeavour to win by alternately chirping and singing throughout the entire evening. The day is spent in hopping about on the ground, and in the evening they disport themselves with wonderful agility upon the branches of their favourite trees. Their flight is rapid and undulating. The nest, which is usually constructed against an upright branch or stem, is formed of coarse grass, lined with slender fibres or hair. The brood consists of from four to five eggs of a uniform dark blue. Shortly after the young are fledged, the whole party attach themselves to a large flock of their congeners, in whose society some few weeks are passed preparatory to their winter migrations. The food of this species consists of a variety of seeds, berries, and insects.

THE PRAIRIE BUNTING FINCH.

The Prairie Bunting Finch (*Passerculus savannus*) is one of the most numerous members of this group; it is distinguished by its short conical beak, the upper mandible of which is short; by its rounded wings, having the third and fourth quills longer than the rest; short graduated tail, moderate tarsus, and soft velvety plumage. Upon the upper portion of the body the feathers are of a pale reddish brown, presenting somewhat the appearance of being spotted, owing to the darker tint upon the shafts; the lower parts are white, marked upon the breast with small deep brown spots, and the sides are streaked with the same colour. The beak is dark brown upon the upper mandible, the lower one a shade paler; the eyes are brown; the feet of a light flesh colour. The length of this bird is five and a half inches, and its breadth eight and a half inches. The female resembles the male, but her plumage is lighter in its tints.

We learn from Audubon that the Prairie Bunting Finch is one of the most beautiful and widely distributed of its kind. It is met with in the Northern States from October to April, inhabiting fields and woodland districts, and living chiefly upon the ground, where its movements are extremely nimble, and resemble those of a mouse; indeed, it only uses its wings when closely pursued, or suddenly alarmed: its flight is irregular but continuous. This species seems to prefer high grounds at no great distance from the coast, and is rarely found inhabiting the interior of woods and forests. During the winter these birds unite themselves to flocks of their congeners, generally passing the day in flying about in search of food in the fields or gardens, and sleeping at night upon the ground. The nest, which is constructed of hay, and lined with some finer materials, is usually placed in a hole upon the ground, or else under the shelter of a bush or high tuft of grass. The eggs, from four to six in number, are of a pale blue colour, marked with purplish-brown spots, which occasionally take the form of a wreath at the broader end of the shell. In the more central States these birds breed twice, whilst farther north they do not lay more than once in the year. The Prairie Bunting Finch is by no means suitable for domestication, as it is almost entirely without voice; but it affords a not unpleasing article of food, both to man and to its still more formidable enemies, the Falcon and Mink.

The SHORE FINCHES (*Ammodromus*) are likewise included in the family of Bunting Finches. They are recognisable by their slender, elongated, pointed beak, compressed at its edges; their wings and tail are of moderate length, with the feathers variously coloured at their extremities.

THE SEA BUNTING FINCH.

The Sea Bunting Finch (*Ammodromus maritimus*) is about six or seven inches long and from ten to eleven inches across the wings. The upper portion of the body is greenish brown, the breast ash grey, the throat and belly white, the bridles and a streak on the top of the head dark grey; a yellow line passes over the eyes. The wings are yellow, bordered by a broad crooked line of brown, the beak and feet are brown, the eyes dark brown.

This very remarkable species does not resemble a Finch in its mode of life, but dwells like a Sandpiper upon the sea-shore, and passes its time in running nimbly and rapidly at the water's edge, or climbing about among the reeds with the agility of a Reed Bunting. Its principal nourishment consists of shrimps, small crabs, sea snails, and little fishes, this food imparting to its flesh a flavour of train oil, so generally observable in most sea birds. Marshes producing reeds and high grass, and well covered with sea water, are the favourite resorts of these birds, and there they build their nests, care being taken to place them in some tuft of grass that is beyond the reach of the waves; the little cradle is formed of coarse grass lined with a bed of finer quality; the eggs, from four to six in number, are greyish white, spotted with brown. As far as we can learn, they breed twice in the year.

THE BUNTINGS.

The Buntings (*Emberizæ*) form the connecting link between the Larks and the Finches proper, and constitute a family extremely rich in species, all presenting a striking resemblance to each other. These birds are characterised by their thick bodies, their wings of moderate length, of which the second or third quills are generally the longest, and by their large tail formed of broad feathers, its termination being either straight or slightly furcated; the feet are short, the toes long, and the hinder toe furnished with a large spur-like nail. The beak, which we regard as the distinguishing feature of this family, is short, conical, and pointed, thick at the base, but much compressed towards its tip; the upper mandible is somewhat narrower than the lower, by which it is slightly overlapped, the cutting margins are strongly bowed inwards, and bent down at a sharp angle towards the gape. Implanted in the palate of the upper jaw there is, moreover, a bony protuberance, which is received into a corresponding cavity in the under jaw; the gullet is enlarged, but can scarcely be said to form a crop, and there is a muscular gizzard.

The Buntings are essentially inhabitants of the northern portions of the earth, but are replaced elsewhere by birds of very similar character. They mostly frequent low, thin brushwood, or beds of reeds, preferring such localities as are in the immediate vicinity of water, or delight in fertile pastures; some species are met with on mountains, others in valleys, but all agree in avoiding forests or thickly-wooded districts. Though we must acknowledge that these birds cannot be regarded as particularly active, or possessed of very excellent endowments, they are by no means deficient in natural gifts, and their capacity, if not remarkable, is quite equal to the position they are called upon to fulfil in the economy of nature. All the species of this family are of social disposition, associating with Finches and Larks, and living in large flocks except in the breeding season, and sometimes even during that period they keep at no great distance from each other, although every little couple has its own nesting place, the immediate neighbourhood of which no other bird is permitted to approach. They exhibit no fear of man, frequently taking up their abode in the immediate neighbourhood of his dwellings, and paying constant visits to his barns, farmyards, gardens, or stables. Most of these birds are migratory, and but few remain for any great length of time in the localities they have selected for breeding-places. Their food consists during the summer of grasshoppers, beetles, caterpillars, and other larvæ, besides flies, gnats, and similar insects; in winter they prefer farinaceous seeds, those of an oily nature being carefully avoided; they eat very largely, and soon become extremely fat. When in search of food they generally alight upon the ground, over which they hop and walk with considerable activity; their flight is undulating, and their song monotonous, the call-note consisting of one prolonged cry. The nest is generally built in a hollow, but is sometimes placed slightly above the surface of the ground, and simply formed of straws and roots lined with fine grass, hair, or feathers. The eggs are from four to six in number, spotted and veined with a dark colour; both parents assist in the work of incubation, and in providing for the little family when fledged. The Buntings were regarded in ancient times as a valuable article of food, and many species are still caught in great numbers for the table in the more southern countries, whilst in the north birds or beasts of prey are the only enemies they have to fear.

THE CRESTED BUNTING.

The Crested Bunting (*Gubernatrix cristatella*), which we have selected as well worthy of notice, is a South American species. This beautiful bird strongly resembles the rest of the family, differing from them, however, in the inferior elongation of the nail upon the hinder toe, and in the fact that it possesses an upright tuft of feathers at the back of its head. The plumage is thick and matted, in the manner observable in most Buntings, the male and female closely resembling each other in this respect. In both birds the back is of a greenish shade, the shoulders and exterior tail-feathers being bordered with yellow; the top of the head and throat are black. In the male the lower part of the body and a line over the eyes are yellow, whilst in the female the breast is grey, the belly and rump pale green, and the cheek white, as is a line that passes over the eyes; the beak is grey, the feet black. Azara gives the measurement of this species as eight inches in length and its breadth twelve inches, the wing four inches, and the tail three and a half inches.

We are unluckily but little acquainted with the habits of this bird when in its native land. The author just quoted, however, tells us that it chiefly frequents the countries watered by the River La Plata, and the southern portions of Brazil, living, as do its congeners, upon such bushes as are at no great height, keeping for the most part on the ground, and rarely perching upon trees or flying to any distance. During the breeding season the Crested Buntings live in pairs, and at all other times in small parties, which are very frequent visitants to the native gardens and farmyards in search of the seeds and insects upon which they principally subsist. Large numbers are frequently caught and sent to Europe, where they are known under the name of the "Green Cardinal." They are often allowed to fly about the gardens in summer, but a warm cage is necessary during winter, as, being tropical birds, they cower together and shiver at the first breath of our autumnal blasts. When caged, they may be reared upon various kinds of bird-seed, finely-chopped meat, ants' eggs, worms, and salad. In disposition they are generally social, and may be safely allowed to consort with other birds, except during the breeding season, when the males are outrageously violent and quarrelsome, fighting and tearing each other until one or both of the combatants are killed or severely wounded, the conqueror continuing to maltreat its victim long after it has been completely *hors de combat*, despite all the endeavours that may be used to drive it from the spot. A nest described to us was built of the stalks of heather, woven together like a basket, and without any softer lining in its interior. The voice of the Green Cardinal is both powerful and agreeable.

THE GREY BUNTING.

The Grey Bunting (*Miliaria valida*) is one of the largest of its family, the length of the body being seven and a half inches, the breadth across the tail twelve and a quarter inches, the wing four inches, and the tail three inches. The female is not quite so large as her mate. The plumage of this species is extremely simple in its coloration; the body is a dark grey, the lower portion, as far as the breast, being marked with white or yellowish white, and the sides with brown. The exterior tail-feathers are of uniform grey, the iris dark brown, the beak greenish yellow, and the feet horn colour. The female is exactly like her mate. The young are darker than the old birds, and the spots upon the feathers larger. The Grey Bunting is not only distinguished by the simplicity of its plumage, but by its comparatively large, strong beak, furnished with a protuberance on its roof; its feet are weak and its wings short; it is likewise remarkable for the shortness of the claw upon the hinder toe.

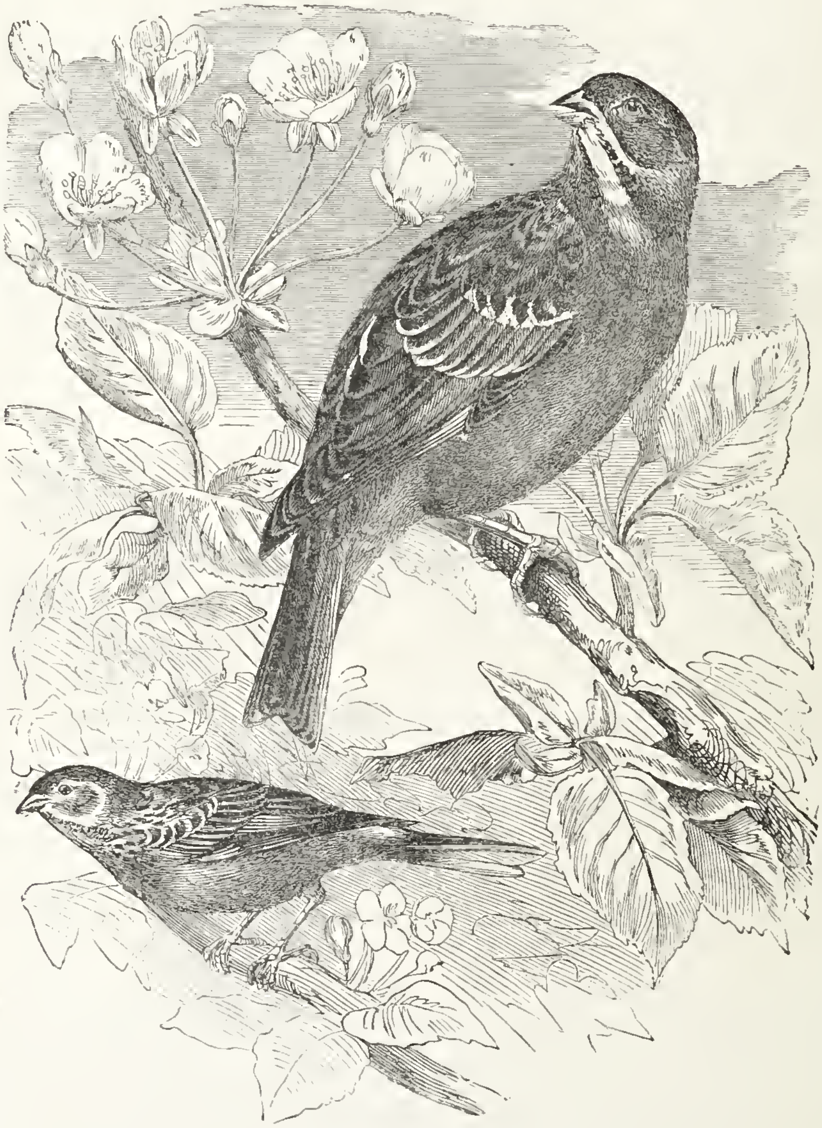
The Grey Buntings inhabit the greater part of Europe, either as permanent residents or as birds of passage, appearing in the largest numbers in the more southern portions of the continent: they are likewise met with both in Egypt and the Canary Isles. Fields and pastures are the localities they prefer, and they but rarely make their home in the neighbourhood of forests or in mountain districts. This bird has a clumsy and unwieldy appearance, as a glance at its stout, powerful body, combined with weak legs and short wings, will at once show; indeed, when upon the ground it looks eminently ungraceful, as it bends itself nearly double, flapping with its tail as it hops slowly from place to place. When in the air it flies with difficulty, the short, whirring strokes of its wings producing an undulating kind of motion. The song of this Bunting has nothing to recommend it, being in sound not unlike the noise produced by a stocking machine, from which fact this species is in many places known as the "Stocking Weaver." Still, however unpleasing to our ears this performance may be, the birds themselves are highly delighted with their own music, accompanying their notes by a variety of gesticulations, and thus appearing to give utterance to sentiments that their very limited gamut does not permit them otherwise to express.

The breeding season commences in April. The nest is generally placed in the grass or amongst a group of plants, and is built of straw and dry leaves, lined with hair and other elastic materials. The eggs, from four to six in number, have a delicate pale grey or dirty yellowish shell, marked with dull purple spots, veins, and lines that are very close together at the broad end. The young are fed upon insects, and are fully fledged by May, when the parent birds at once proceed to undertake the care of a second family, only joining the rest of the flock when the work of incubation is completed. The flesh of the Grey Bunting is considered excellent; it is therefore much sought after by man, whose example is followed by falcons, rats, foxes, and other animals.

THE GOLDEN BUNTING

The Golden Bunting, or Yellow Bunting (*Emberiza citrinella*), is to be met with in the same parts of our continent as afford a home to the species last described, from which it is distinguished by the beauty of its plumage, and the comparative slenderness of its beak. The Yellow Bunting is about six and a half inches long, and from ten to ten and a half inches in breadth; the wing measures three and a quarter inches, and the tail two and three-quarter inches; the plumage of the male is admired for its markings and the brightness of its tints; the head and lower portion of the neck are of a bright lemon yellow, and the breast and belly streaked with reddish brown; the sides of the breast, rump, and mantle are of a vivid rust colour, the latter being streaked with dark brown; the throat is tinted with a mixture of olive green and reddish yellow, and the wings and tail are bordered by two lines, formed by the yellowish tips of the feathers; the iris is brown, the beak blueish, and the feet of a deep flesh colour. The female is by no means so handsome as her mate.

Unlike the Grey Bunting, this species is frequently found at a considerable altitude, and is very numerous upon the Swiss Alps: it generally, however, prefers woodland districts, where it hops about with an agility and grace far exceeding that of its grey brother, whom it also much surpasses in the quality of its voice. During the entire summer Golden Buntings are seen flying over the country either in pairs or small parties; but no sooner does spring approach than the little couples creep under some low bush or bushy plant, and commence their preparations for a young family, generally building their nest with fine grass or some similar material, and enlivening their work by a constant flow of song, that has been freely translated into a number of sentences appropriate to the business upon which they are employed; these jubilant sounds are uttered whilst perched upon a high branch, from which the bold songster will look down upon the approach of a man without exhibiting any alarm. The brood consists of from four to five eggs of a dirty white or reddish colour, veined and spotted with a darker shade. Both parents assist in the work of incubation, and feed the young exclusively upon insect nourishment; should the season be favourable, these birds will breed twice or thrice in the year. When the rearing of the several families is completed, young and old congregate into one large flock, and fly about the country in company with Larks, Finches, and Thrushes, for whose society they appear to feel a wonderful predilection, which is, however, not so peaceful in its nature as to prevent innumerable squabbles, though these rarely become serious. On the approach of winter, the flocks are compelled to seek their food in the neighbouring fields and farmyards, their visits being by no means welcome to the proprietors, who, nevertheless, but rarely take any means to protect themselves against such petty marauders.

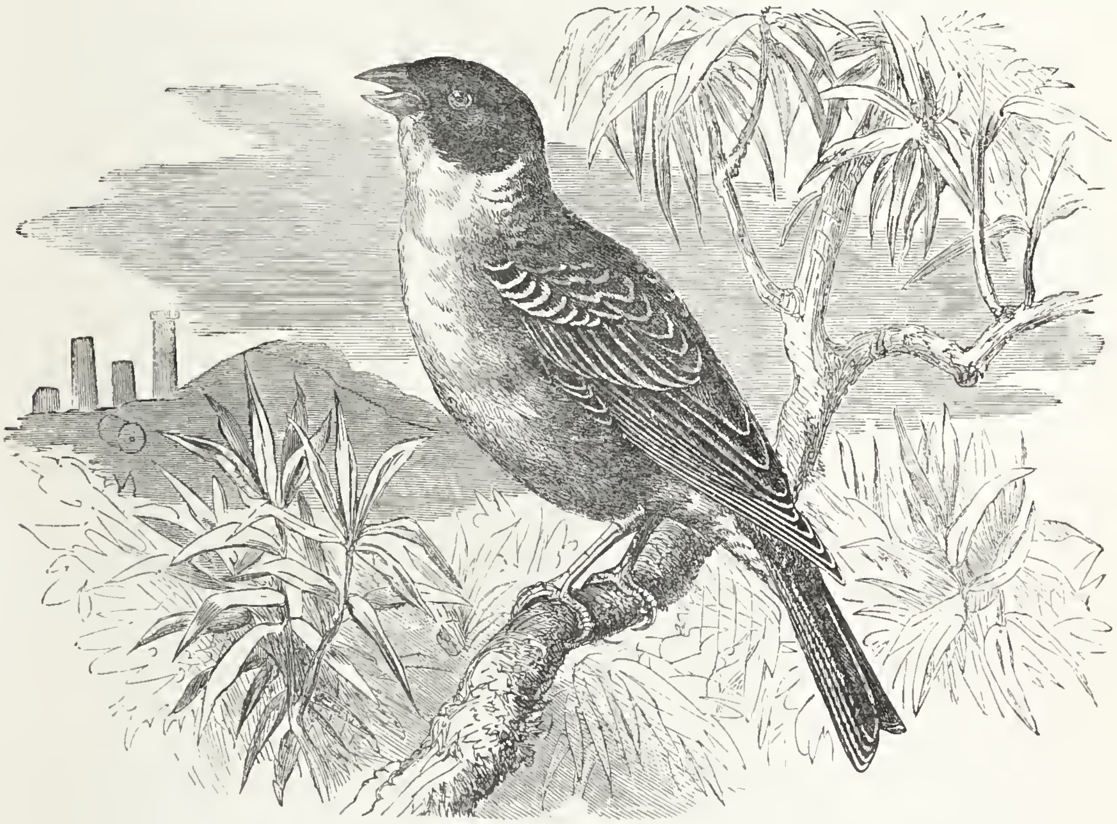


THE ORTOLAN OR GARDEN BUNTING (*Emberiza-Glycyspina hortulana*).

THE ORTOLAN.

The Ortolan, or Garden Bunting (*Glycyspina hortulana*), is a member of this family; in size it is somewhat smaller than the Golden Bunting, its body not measuring more than six inches in length; the span of its wings is about ten inches, the wings three inches, and the tail two and a half inches. The female is not quite so large as her mate. Among the Ortolans the sexes are but little distinguishable by their plumage, in which a reddish brown generally predominates. The head, nape, and front of the neck are grey, the throat, stripe upon the cheeks, and a small circle round the eyes of a straw colour. The back is marked with long dark streaks, the wing-quills are brown, the secondaries being bordered with light brown, and the rest with light red, as are also the tail-feathers; the exterior tail-feathers have a long white patch upon their inner web. The plumage of the female is spotted and duller in its tints than that of the male, which, however, resembles her in these respects during the winter months. The iris is brown, and the feet and back of a reddish grey.

The Ortolan is found throughout the greater portion of the European continent, and is extremely common both in South Norway and in Sweden, as also in Southern Italy and on the eastern coast of Spain. It is well known in Holland, England, France, Russia, and some parts of Germany; it inhabits Asia as far as the Altai Mountains, and, though rare, is occasionally met with in Northern Africa. In its life and habits the Garden Bunting closely resembles its golden-plumaged relative, and even surpasses it in its powers of song, although the voices of the two are very similar. The nest is built upon the lowest branches of some thickly-foliaged tree. The eggs, four or six in number, are whitish red or reddish grey, streaked and spotted with blackish blue. The Ortolan is entitled to our notice from the fact that it enjoys and always has maintained a very high reputation as a delicate and costly article of food. By the Romans these birds were always tended with the greatest care, in order that their flesh might attain its full perfection, and lamps were kept constantly burning near their cages at night, that they might eat with as little intermission as possible. This mode of fattening them is still employed in Italy and the South of France, as well as among the Greek Islands, where Ortolans are kept in great numbers. When ready for the market, their necks are wrung, the birds steeped in boiling water, and then packed by hundreds in small casks filled with highly-spiced vinegar, after which precautionary measure they are exported to foreign markets, where they always command a high price. At the present day, the gamekeepers in many parts of Germany are allowed to appropriate the proceeds of the sale of these delicate birds, whose flesh resembles that of the Snipe, but is, in the opinion of the epicure, even more delicate.



THE BLACK-HEADED BUNTING (*Euspiza melanocephala*).

THE RED BUNTING.

The Red Bunting or Meadow Bunting (*Emberiza-Glycyspina cia*) is, in our opinion, a more beautiful species than the much-prized Ortolan, its plumage being as noticeable for its elegant markings as for the brilliancy of its colours. The principal tint is reddish brown; the throat, head, and upper part of the breast are of a delicate grey; the cheeks and ears are surrounded by a black ring, which is enclosed by two white lines, the back is marked by a series of spots running in stripes, and the wings are ornamented with two light borders. The markings in the plumage of the female are less distinct, and her throat lighter and more spotted than in the case of her mate. The iris is dark brown, and the beak blueish black upon the upper mandible, the lower mandible is light blue, and the feet are horn colour. The length of this bird is about six and a half inches, its breadth nine and a half inches, and the wing and tail two and three-quarter inches. The female is not quite so large. The Red Bunting is an inhabitant of the South, only frequenting such parts of Germany as are watered by the Rhine; but is numerous in Austria, Spain, Italy, and Greece, spreading from these countries over Asia, till it reaches the Himalaya Mountains, where we hear it is very constantly met with; indeed, our own observations lead us to suppose that this species prefers mountain districts, avoiding open plains, and is an inhabitant of the Swiss Alps. There can be no question that precipices abounding with large fragments of stone afford a most acceptable shelter for the purpose of incubation, and in such localities it disports itself much in the same fashion as its congeners, but is rarely seen perching elsewhere. In its flight, general habits, and song, it is a true Bunting. The nest is generally built on and about rocks, or in fissures of the walls that surround the vineyards, with which the sides of the mountains are frequently covered. The eggs, three or four in number, are greyish black surrounded with grey lines, often arranged like a girdle round the middle, thus distinguishing them from those of the Yellow Bunting. [For drawings of the eggs of this species and of the Cirl Bunting (*Emberiza cirlus*) see Coloured Plate IV.] The parent birds breed twice in the season, and when the period of incubation is over join the large flocks of their companions, with whom they pass the rest of the year.

THE BLACK-HEADED BUNTING.

The Black-headed Bunting (*Euspiza melanocephala*), an inhabitant of the south-eastern portion of Europe, and of a large portion of South-western Asia, is one of the most beautiful of the many species belonging to this extensive family. It is recognisable by its elongated beak, furnished with a long sharp protuberance under its roof, and by the more uniform coloration of its plumage, which differs widely in the two sexes. The Black-headed Bunting is seven inches long, and eleven and a half across the wings, the wings and tail measuring about three inches in length. The head of the male is jet-black, the back rust-red, the whole of the under part of the body of a golden colour, and the wings and tail dark brown. The female is without the black hood, the bridles are greyish brown, the back reddish grey, each feather being bordered with a lighter shade, and having a dark shaft; the under part of the body is pale yellow, and the throat of a whitish hue; the quills, wings, and tail-covers are dark brown, edged with a lighter tint, or with brownish white; the beak is light blue, and the feet of a deep flesh colour.

The Black-headed Buntings commence their migrations about the month of November, and very shortly after leaving Europe make their appearance in the Deccan, and upper provinces of Hindostan, assembling there in large flocks, and making terrible havoc in the corn-fields, until the time returns for carrying on their work of destruction in our part of the world, where, on their arrival, they may be seen perching in crowds upon the sea shore, as they alight to rest after their long and arduous flight. We are told by Von Mühle that these birds are so extremely dull and stupid in their disposition that the male when singing will allow himself to be approached and killed with a stick, but in other respects they resemble the rest of their congeners. The nest is usually built upon a hill side, the female burying herself as far as possible among the surrounding plants or grass, whilst her mate perches upon a neighbouring shrub or tree and cheers her with a constant flow of song. The little cradle is formed without art of the stalks of plants and leaves loosely woven together, and lined with delicate fibres of hair or fine grass. The eggs, which are laid about the middle of June, are of a pale blueish green, marked with more or less distinct green, red, or grey spots.

THE REED BUNTING.

The Reed Bunting (*Cynchramus Schœniclus*) has been separated from the other members of its family on account of the peculiar formation of its beak, and though closely resembling them in many particulars, certainly differs from them in its habits. The Reed Bunting is about six inches long and twenty-nine broad, the wings and the tail measuring rather more than two inches. The female is not quite so large. The head and entire throat of the male are deep black, a white stripe passes from the corner of the beak towards the shoulder, uniting itself with a band of the same hue that encircles the neck; the back is brown, each feather being edged with a lighter shade, and having a dark shaft, giving to this part of the plumage a somewhat sparrow-like appearance; the rump is ash grey, the belly white, and the sides grey, marked with dark longitudinal streaks. In the female the head is brown, with markings of a darker shade, the throat dirty white, and encircled by a spotted band; the nestlings and young males resemble the mother. The eye is brown, the beak blue, darker upon the upper mandible, and light beneath; the feet are reddish grey.

This species is found throughout Europe, inhabiting every country even as far north as Lapland. It is, however, generally met with in such districts only as are near to water, or in marshy land, rich in water-plants, reeds, or willows, on or near which it makes its nest. The nest itself is frequently built on some small patch of ground, encircled by water; it is constructed of grass or roots woven neatly together and lined with cotton down taken from seeds or willows. This little dwelling is placed upon the ground in such a manner as to be hidden by the surrounding vegetation, and (about May) is generally found to contain from four to six pretty eggs, differing considerably from each other in appearance, but for the most part of a brownish or reddish tinge, with a profusion of dark brown or grey spots and veins. These birds are much attached to their young, and the mother will actually permit herself to be removed from the nest by force rather than desert her offspring. In its general attributes the Reed Bunting certainly stands superior to most of its fellows, far exceeding them in the activity it displays either when hopping on the ground or jumping from twig to twig: its flight is rapid and undulating, occasionally varied by more energetic efforts as the light and elegant bird rises swiftly into the air, where it performs a variety of evolutions, and then as speedily descends. Its song is monotonous, but far from unpleasing; its call a more prolonged note than is usually produced by a Bunting. During the summer, the food of this species consists principally of such insects as it obtains from the reeds growing in the immediate vicinity of the water, and in winter it subsists upon the seeds that abound in its favourite haunts; it is only after the breeding season that it is tempted to join company with others of its kind, and make short excursions to pilfer the neighbouring corn-fields, very much after the manner of Sparrows. On the approach of winter, it seeks refuge in a more congenial climate, visiting Spain and other southern countries in large flocks.

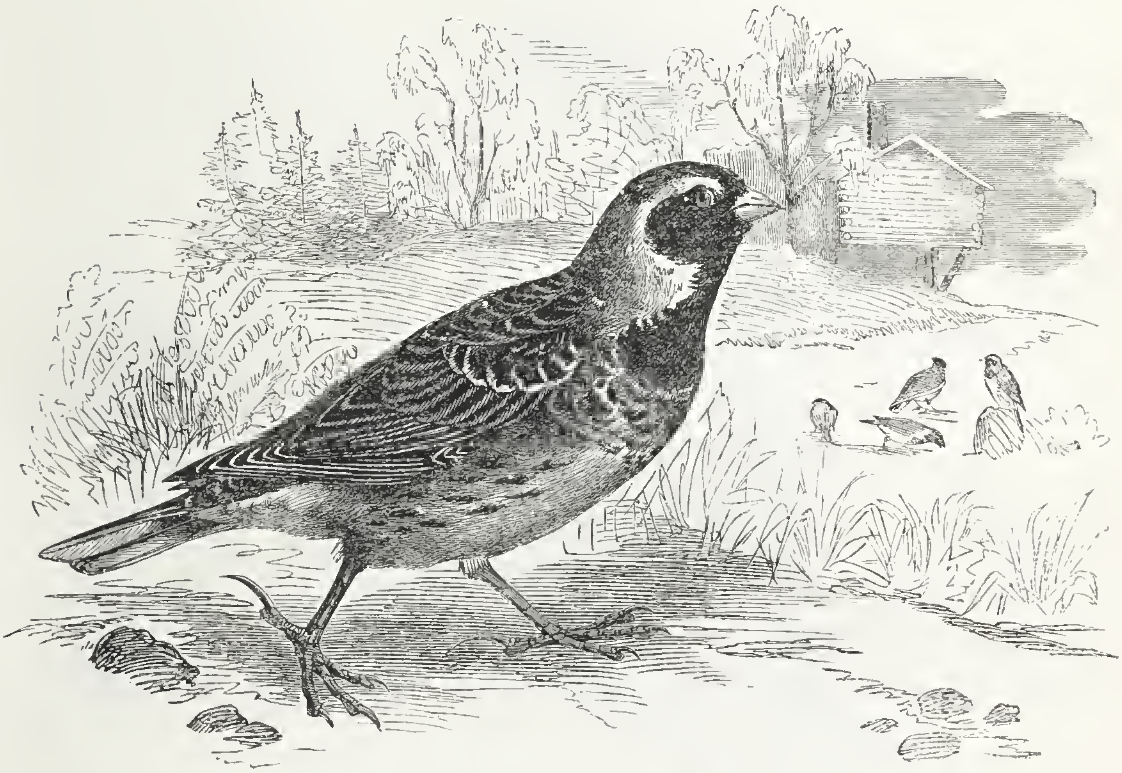
The SPUR BUNTINGS or LARK BUNTINGS (*Centrophanes*) constitute an extensive group that comprises many beautifully plumaged species, distinguished by the remarkable elongation of the nail upon their hinder toe. They are all recognisable by their small beaks, with only a slight excrescence in the upper portion, by their long, pointed wings, tail of moderate length, strong feet, and the aforesaid spur, which is much bent, in some cases nearly equalling, and in others exceeding the toe in length.

THE REED BUNTING (*Cynchramus Schœniclus*).

THE LARK BUNTING.

In the Spur Bunting or Lark Bunting (*Centrophanes lapponicus*) the characteristic nail is longer than the toe itself. The plumage of the male is black upon the top of the head, and beneath the throat; the nape is a bright rust-red, marked with a reddish-white line that passes over the eyes, and lower down takes the form of the letter S; the back is brown, streaked with a deeper shade; the wings brownish black, with light borders to the small covers and individual quills; the lower part of the body is greyish white, marked upon the sides with large black streaks and spots. The female is without the black upon the head, throat, and sides, and her plumage is of a paler tint than that of the male. During the winter the black markings are frequently almost concealed under the white edges that the feathers acquire at that season. The young resemble the mother, but have long dark streaks upon the lower portion of the body. The iris is dark brown, the beak blueish black at its tip, and the feet a greyish brown. The length of this species is about six inches, and the breadth ten inches; the wing measures three and a half inches, and the tail two and a half inches. The female is smaller than her mate.

The Lark Bunting is to be found in all the northern countries of Europe, and is extremely numerous in Lapland, its favourite haunts being mountains, barren highlands, or birch forests. Its habits are a curious mixture of those of the Lark and Reed Bunting; it runs on the ground after the manner of the former, and perches like the latter, while its flight bears a resemblance to that of both birds. The call-note is melancholy, and its sound well suited to the localities where it is heard: the song is very simple, and is, we believe, only uttered whilst on the wing. Schräder tells us that this species visits Lapland about April, and at once proceeds to make its nest, which is safely concealed under the roots of a birch tree, or hidden amongst the surrounding plants; exteriorly it is formed of coarse, thick grass, and lined with soft feathers. The eggs, five or six in number, are laid about the middle of June; in shape they are elongated, and of a grey or yellowish colour, marked more or less with dark spots or lines, which are, however, occasionally wanting. As soon as the duties of incubation are concluded the little pairs unite themselves into parties, and appear during their journeyings over the country to be almost entirely without fear of man, and quite ignorant of his dangerous powers. The food of these birds during the summer months consists principally of gnats and other insects, and in winter of various kinds of seeds. The migrations of Lark Buntings rarely extend beyond the southern parts of Scandinavia, such as have visited Germany being, no doubt, stragglers that have wandered involuntarily from the rest. Naumann tells us that they constantly seek the society of Larks, and that their flesh is frequently eaten.



THE LARK BUNTING (*Centrophanes lapponicus*).

THE SNOW BUNTING.

The Snow Bunting (*Plectrophanes nivalis*), the last member of this family to which we shall call our readers' attention, is distinguished by the remarkable thickness of its plumage, and in several other respects differs from its congeners. The beak resembles that of the Lark Bunting, but the wings are comparatively long, and the tail short; the spur-like nail is likewise bent, and not quite so large as in that bird. The male is from six to seven inches long, its breadth about twelve inches; the wing four and a quarter inches, and the tail two and a half inches. Simple as are the colours in the plumage of the young male, its beauty cannot fail to excite admiration. The middle of the back and tips of the quills are black, as is the upper portion of the middle tail-feathers, and a spot upon the carpal portion of the wing; the lower parts of the tail-feathers are bordered with brownish grey, gradually shading into black towards their roots, and the whole of the remainder of the plumage is of a pure white. The iris is light brown, the beak blue at its base and black at the tip; the feet are of a brownish black colour. The head of the female is of a blackish shade, that of the young bird grey; but during the winter the head and neck are brownish grey, marked with a black crescent-shaped spot; at that season the breast is of a quieter tint, only the wings and tail retaining colours similar to those they exhibit in summer. The plumage of the young birds is a dull reddish brown, the back brown with dark markings; the wings are striped with two white bands.

THE SNOW BUNTING (*Plectrophanes nivalis*).

This species is an inhabitant of the same countries as those frequented by the Lark Bunting, but is often found living in much higher latitudes than that bird, even breeding so far north as the islands of Spitzbergen and of Novaja Zemlja. We ourselves have met with it during the summer in Scandinavia, in the northern part of Lapland, and upon the highest of the Dovrefeld Mountains.

Rocky passes seem to afford it the localities it prefers when about to breed; the nest, which is formed of moss and grass, lined with down and feathers, is placed in a cleft of rock, or under a large stone, the entrance to this secret retreat being made of the very smallest proportions consistent with the possibility of the parent birds slipping in and out of the nest. The brood consists of from five to six eggs, so extremely various in their colour and markings as to render any attempt at description useless. The young are fed almost exclusively with insects, upon which their parents also subsist in the breeding season, seeds of various kinds affording them nourishment during the winter.

The flocks of these beautiful creatures are remarkably numerous; they pour in dense masses over the country, and drop like snow-flakes upon such spots as seem to offer them the food of which they are in search—indeed, so strong is the resemblance of these swarms to a snow-storm, when thus seen congregated in large numbers, that the birds are popularly called "Snowflakes" in St. Petersburg, where they are met with in much greater multitudes than in other parts of Europe. Many tales are told of these flocks settling down, during their migrations, on the decks of ships, in order to enjoy a short repose; upon such occasions, however, they rise again into the air almost immediately, and continue their long and weary journey, even should they have to encounter the full violence of a contrary wind.

In its demeanour this species bears quite as close a resemblance to the Lark as to its more immediate relations. Its movements upon the ground are easy, its flight rapid and extremely light, the bird rising high into the air when about to fly to a distance, but keeping near the ground during its ordinary daily excursions. Naumann tells us that the evolutions of a flock of Snow Buntings are extremely curious, the whole party appearing to revolve around each other whilst on the wing, much after the fashion of waltzers in a ball-room—indeed, under every circumstance of their active lives they never lose their restless and unwearying activity, which even great cold or want of food seems unable to abate or restrain. The fields afford them sustenance during the winter, and over these they hover, scarcely ceasing from their flight even when occupied in obtaining food; but should the supply from this source prove insufficient for the wants of the party, they are, as a last resource, driven into towns and villages, in order to obtain from thence provisions not to be found elsewhere. Their song is not unlike that of the Lark, and their call a shrill piping note, generally uttered whilst on the wing; when singing, on the contrary, they prefer to perch upon a stone or bed of snow, as near as possible to the mate for whose delectation their music is intended.

THE LARKS.

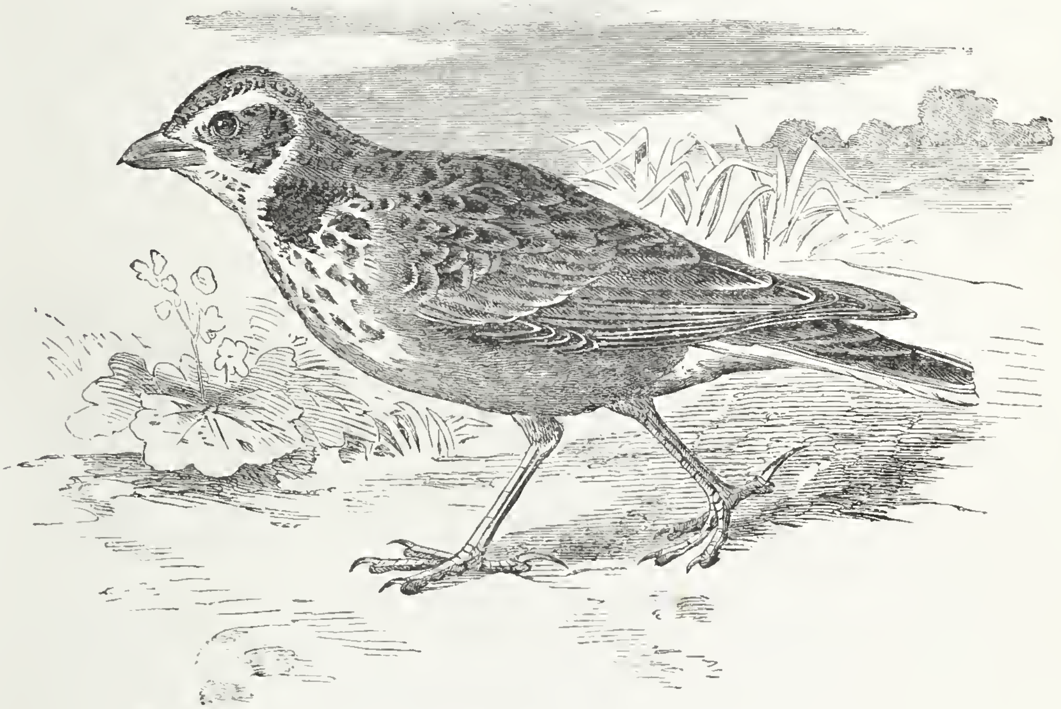
The Larks (*Alaudæ*) differ widely in their habits from the rest of the Passerine Order, inasmuch as they reside so exclusively upon the ground, that we should feel very much surprised to see a Lark perching in a tree, or disporting itself amongst the branches.

All the various members of this family are stoutly built, with large heads, beaks of short or moderate length, long and very broad wings, short tails, and rather flat feet, furnished with toes of middle size, armed in some species with a spur-like nail: the tail, which is by no means large, is composed of twelve feathers evenly cut off at their extremity. The plumage is of a brownish shade, nearly alike in the two sexes, but varying considerably as the birds increase in age. The internal structure of the body differs in no essential particulars from that of other Passeres. The skeleton is powerful; the bones for the most part filled with air, and without marrow; the singing apparatus is well developed; the lungs are large and the gizzard muscular; there is no crop. These birds inhabit the open country, whether cultivated or not, and are most numerously met with in temperate latitudes, some preferring fields, whilst others are restricted to steppes or desert plains. Most species must be considered as migratory, that is to say, such as are found in the more northern countries seek for sunnier climes when winter approaches, whilst those that inhabit the South may be regarded as stationary; but in no case do these migratory excursions extend to any great distance; and though the Larks are amongst our first visitors, their stay with us is never protracted beyond the autumn. The behaviour of all the members of this group is characterised by many peculiarities that distinguish them from other Passeres. When upon the ground they do not hop, but *step* with surprising rapidity, and their flight is remarkable for the variety of the evolutions by which it is accomplished. Should the bird be eager to reach its destination it flies in large undulating curves, produced by alternately opening and closing the wings; but if, on the contrary, the little warbler is about to pour forth its glorious song, it darts straight into the sky, like an arrow from a bow, or else rises rapidly, but more leisurely, in a series of spiral circles until it is quite out of sight. When about to descend, it hovers for a short space in one spot, and then by a sudden plunge reaches the ground, with body contracted and wings completely closed. At other times it may be seen skimming close to the earth, or over the surface of a sheet of water, occasionally varying these several kinds of exercise or amusement by chasing its companions in buoyant and sportive flights through the air. As regards their capabilities, the Larks have certainly been highly favoured by Nature, but their intelligence is by no means equal to their other endowments. Most of the members of this family are good singers, some of them very highly gifted in that respect, and capable not only of uttering a great variety of notes, but of imitating many of the sounds they hear. All are of a cheerful and restless disposition, associating but little with other birds, and exhibiting no fear of man or his snares, except after experience of his tyranny. We have already said that Larks are rarely found on trees, but pass their lives principally upon the ground from which they procure the seeds and insects that constitute their principal food. During the summer they consume large quantities of small beetles, butterflies, grasshoppers, spiders, and larvæ; these, with seeds of various kinds, and young shoots from the budding corn, constitute their daily fare; at other seasons different kinds of grain, large and small, are eaten when still in the husk, thus necessitating the swallowing of sand and little pebbles in order to assist the gizzard in the labour of digestion. Water seems to be held in actual aversion by these birds; they cleanse themselves, as do the domestic fowls, by scratching about in the dust or sand; snow is also frequently used during the winter for the same purpose. The Larks build their nests upon the ground, or in small hollows scooped out for the reception of the little structure, which is not remarkable for beauty; the principal object in the choice of materials being to select such as are not easily distinguishable from the ground upon which the nest stands; dry blades of grass and leaves are generally employed for the purpose, and these are woven together with but slight attention to comfort or compactness. The brood consists of from four to six eggs, and as each pair breeds twice in the course of the year, the increase of these birds is extremely rapid; indeed, if this were not the case, their extermination would be speedily accomplished, for their enemies are terribly numerous, those inhabiting southern countries being particularly unfortunate in this respect, as snakes and lizards are there added to the already large number of destroyers, from whose teeth and claws so many of their northern congeners are unable to escape. Man himself, however, is, after all, by far the most redoubtable of their foes; for hundreds of thousands of these little songsters are captured annually in order to add to the list of delicacies supplied to his already over-stocked table.

The CALANDRA LARKS (*Melanocorypha*) are distinguished by their strong beaks, vaulted both above and below, and slightly compressed at the sides; by their long wings, short tails, and the cheerful coloration of their plumage.

THE CALANDRA LARK.

The Calandra Lark (*Melanocorypha Calandra*), which we select as the type of this group, is the most celebrated of all the species inhabiting Southern Europe. It exceeds most of its congeners in size, the length of its body being from seven to eight inches, its breadth fifteen to seventeen inches, the wing five and a quarter inches, and the tail two and a half inches. The plumage is of a reddish brown, marked with black along its upper portion; the feathers on the wing-covers are tipped with white, thus producing the effect of two distinct white lines; the shoulder-feathers are bordered with white, and the exterior tail-feathers entirely of that hue. The under parts of the body are whitish yellow, streaked with brown along the upper portion of the breast, and the sides of the neck are marked with an irregular black spot; the eyes are light brown, the beak and feet horn colour. The coat of the young bird is of a reddish yellow upon the back, the individual feathers being edged with a paler shade. The head is marked with round spots, and with one irregular, pale black patch.



THE CALANDRA LARK (*Melanocorypha Calandra*).

These birds abound in Southern Europe, and occasionally in the south-eastern parts of our continent; they are also met with in Central Asia, North America, Northern Africa, India, and China, being very numerous in the latter country. In Asia the Calandra Lark almost exclusively inhabits the boundless steppes, whilst in other parts of the world it shows no particular preference as to situation, frequenting agricultural districts or barren tracts with equal impartiality. Though usually of a social disposition, it separates itself from the rest of its companions during the breeding season, and watches over its little partner with most jealous care; as soon, however, as the labours of incubation are accomplished the various couples again congregate, and form large flocks. Its general habits resemble those described as common to the whole family, the principal difference being that the Calandra Lark, unlike its congeners, frees the seed or corn from the husk before swallowing it. The nest is built of dry stalks or fine roots carelessly woven together, and placed either behind a clod of earth or under a small bush, sometimes amongst corn, a small hollow being always prepared for its reception. The brood usually consists of four or five large, round, white or yellowish white eggs, thickly covered with light brown or grey spots.

Much has been said and written in praise of the song of the Calandra Lark, but words are quite inadequate to describe the effect it is capable of producing upon the minds of all who listen as it pours forth an almost unceasing flow of sweet sounds, combining in the most surprising manner, not merely the great variety of tones constituting its own peculiar song, but the notes and music uttered by almost every other kind of bird, the whole being exquisitely adorned and blended by the little vocalist, who thus produces an ever-changeful strain, which must be heard under the wide canopy of heaven before its full beauty can be appreciated. When in a room, the whole performance is too loud to permit the hearer adequately to appreciate the versatile powers of the little songster, who not unfrequently gives utterance to a surprising flow of varied cadences, without any visible exertion of the throat, the sounds appearing, strangely enough, to proceed entirely from the beak. With us these Larks are not much esteemed as household pets, owing, as we have said, to the loudness of their voice; but in Spain great numbers are caught for domestication, the capture being generally achieved at night with the aid of sheep-bells and dark lanterns, the birds thus deluded remaining stationary, under the impression that only a flock of sheep is approaching, and thus their pursuers are enabled to enclose multitudes of them in their nets before the unsuspecting victims can escape.

THE SHORT-TOED LARK.

The Short-toed Lark, or Calandrelle (*Calandritis brachydactyla*), is a well-known species, inhabiting Spain and Italy, and differs from that above described in the comparative smallness of its beak and very short spurs. The upper portion of the body is of a light clay colour, with a reddish tint upon the head, and a grey shade here and there upon the back; the under parts are pale greyish yellow; the wings are bordered with a darker shade than those of the Calandra Lark, and the spots on the neck are smaller and fainter than in that bird. Its length is about five and a half inches, its breadth from ten to eleven inches; the wing measures three and a half inches, and the tail from two to two and a half inches.

The Calandrelle is found in considerable numbers, inhabiting all the plains of Southern Europe, Central Asia, and Western Africa, where it frequents alike the barren wastes or cultivated districts. The Asiatic steppes and desert tracts of the South must, however, be regarded as its actual habitat, and in such localities the resemblance between the parched herbage or dry ground and the attire of the bird is so deceptive, that the little creature need but lower its head to become completely unrecognisable at the distance of a few paces from the spot upon which it stands. Such of this species as frequent Spain, commence their wanderings in the early spring, keeping together in enormous flocks until the breeding season, when they separate into pairs, each couple choosing a convenient nesting-place, which is not left until the end of summer. The flight and habits of these birds have some few peculiarities, but in most respects they closely resemble the rest of the Lark family. When upon the wing they fly in irregular curves, ascending into the sky, if we may so describe it, by a kind of *climbing motion*, and descending at once with the direct impetus and closed wings usually seen in the earthward course of their congeners. Their song has been humorously described as "patchwork," and so it actually is, for the performance is never consecutive, each long, shrill note being followed by an entirely distinct and unconnected sound, the effect of which is far from pleasing, especially as their notes are often repeated some twenty times in succession without the slightest variation beyond an occasional change of key. Yet, despite the poverty of its own song, this bird is capable of imitating the voice of its feathered companions with considerable skill, and may be heard pouring forth its disjointed notes almost during the whole day, both when upon the ground, or while mounting upwards to the sky.

The nest of the Calandrelle is carelessly constructed, but very safely concealed from view; the eggs are grey or pale yellow, marked more or less distinctly and very variously with reddish brown. At the commencement of September the annual migrations of these Larks have fully commenced, and flocks of them may be seen winging their way in immense masses towards the wooded steppes of Central Africa, literally forming clouds that obscure the sky, or when they alight covering the entire ground, very frequently for half an hour at a time. Jerdon mentions their appearance in India in very similar terms, and tells us that on one occasion he brought down no fewer than twelve dozen of these birds with two shots from a double-barrelled gun—a statement for the truth of which we can fully vouch after our own experiences in Central Africa. Thousands are also destroyed in Spain, but the increase is so large as to prevent any serious diminution of their numbers.

The BLACK LARKS (*Saxilauda*) form a group very closely resembling the Calandra Larks, but recognisable by the peculiarity of their plumage and the Finch-like form of their beaks.

THE BLACK LARK.

The Black Lark, or Moor Lark (*Saxilauda Tatarica*), is about seven and a half to eight inches long, the wings five and a half, and the tail three inches. The coat of the old male bird is coal-black, shaded, after moulting, with white, both upon the back and lower portion of the body; indeed, at that time the plumage may almost be described as *chequered*, each feather having a white border, which gradually wears away as the season advances. The beak is yellow, tipped with a dark shade, the feet brown, and the eyes light brown. The coat of the female is brown, marked with a deeper tint, the under portion of the body being white: the young resemble the mother. Swarms of these Moor Larks are found inhabiting the steppes of Central Asia, where they frequently linger from year's end to year's end, never leaving except to wander to somewhat higher ground, in search of a spot upon which they can escape the snow that drives them from the lower parts of the country. Eversmann tells us that he saw them in large flocks upon the Asiatic steppes during the winter, but with the particulars of their summer life in Asia we are entirely unacquainted, except that the seeds of various plants and insects constitute their favourite food. As to its general habits, this species closely resembles the Calandra Lark, with which it frequently associates. The brood consists of from four to six pale blue eggs, marked with reddish spots; the nest exhibits but small trace of care in its construction.

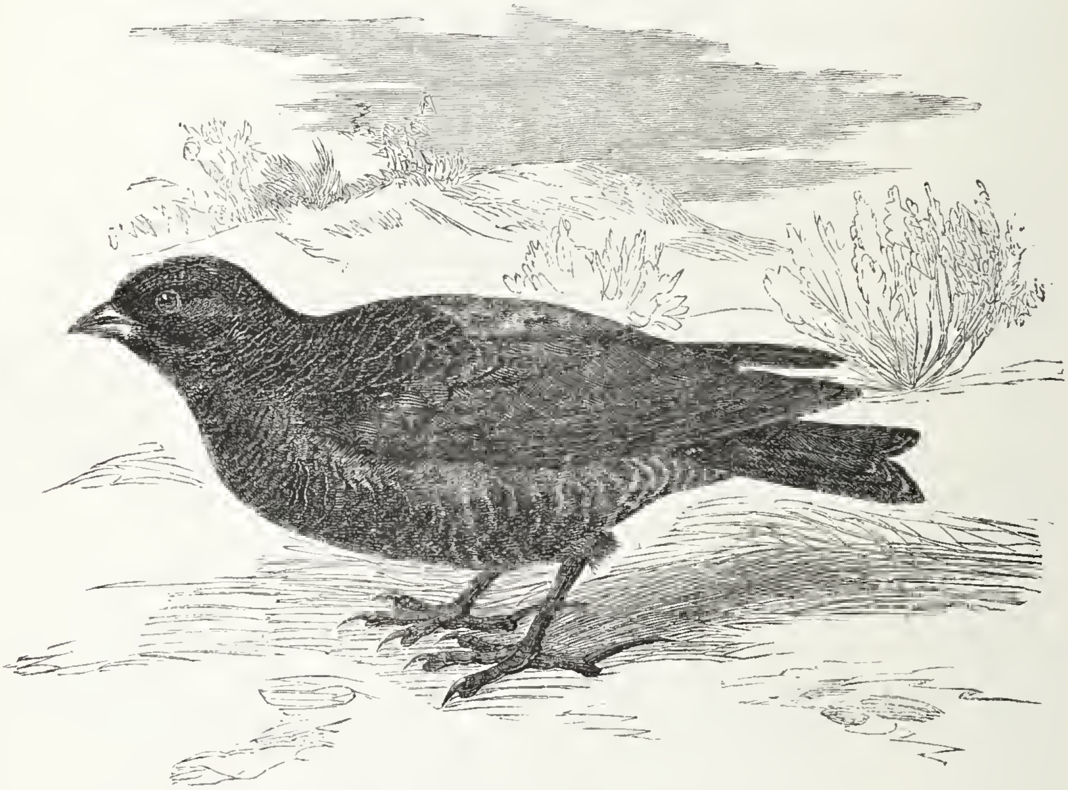
We must here again call our readers' attention to the admirable manner in which the colours of the feathered tribes are adapted to the particular situations in which their life is to be passed. Seeing that the Black Larks could only exist where the soil is of a similarly dark character, another race of these birds has been appointed to cheer the barren desert with their presence, coloured so as to harmonise and blend with the light and sandy plains that they frequent; such are—

The SAND LARKS (*Ammomanes*), easily recognisable by their strong beaks, very powerful, broad, long, and pointed wings, comparatively large and excised tail, and sand-coloured plumage; all the various species closely resemble each other in these particulars.

THE DESERT LARK.

The Desert Lark (*Ammomanes deserti*) is one of the smallest members of this group, not being more than five and a half inches long, and eight and a half broad. The upper part of the body is of a sandy yellow or grey, marked upon the throat by fine dark lines; the black tail and wing feathers are edged with reddish brown.

We ourselves have met with these birds in all parts of the African Desert, even in the sandy plains called by the Arabs *Hammadas*, or *Red Lot;* indeed, such spots as these are selected by preference, the little creatures seeming carefully to avoid the oases, or any districts that bear the impress of cultivation, only leaving the burning wastes to wander unmolested through the ruined temples of the Pharaohs, to which their dismal cry seems to lend an additional shade of gloom. In their movements the Desert Larks exhibit an activity and adroitness that enables them to travel over the loose sand upon which they live with surprising rapidity. Their disposition is quiet, and so extremely engaging, as to cause them to be regarded by the Arabs with peculiar favour; as to their requirements, they must certainly be numbered amongst the most easily satisfied of living creatures a little sand and a few stones are all they need to form a home, and should the locality selected by a pair of Desert Larks afford them a few blades of coarse grass, their utmost desires are fulfilled. Day after day you may visit the spot, and there they will be found perching upon the same stone, apparently as happy and contented as birds can be. Early in the year they commence the labours attendant upon incubation, concealing their nests with so much care amongst the stones, that all our attempts to discover them have proved fruitless. Nothing can exceed the fearlessness with which man is regarded by the Desert Lark; it will frequently allow the approach of a stranger without the slightest demonstration of alarm, having learned by experience that their attractive manners render them safe at least from the pursuit of the Arab, if not of the naturalist.



THE MOOR LARK (*Saxilauda Tatarica*).

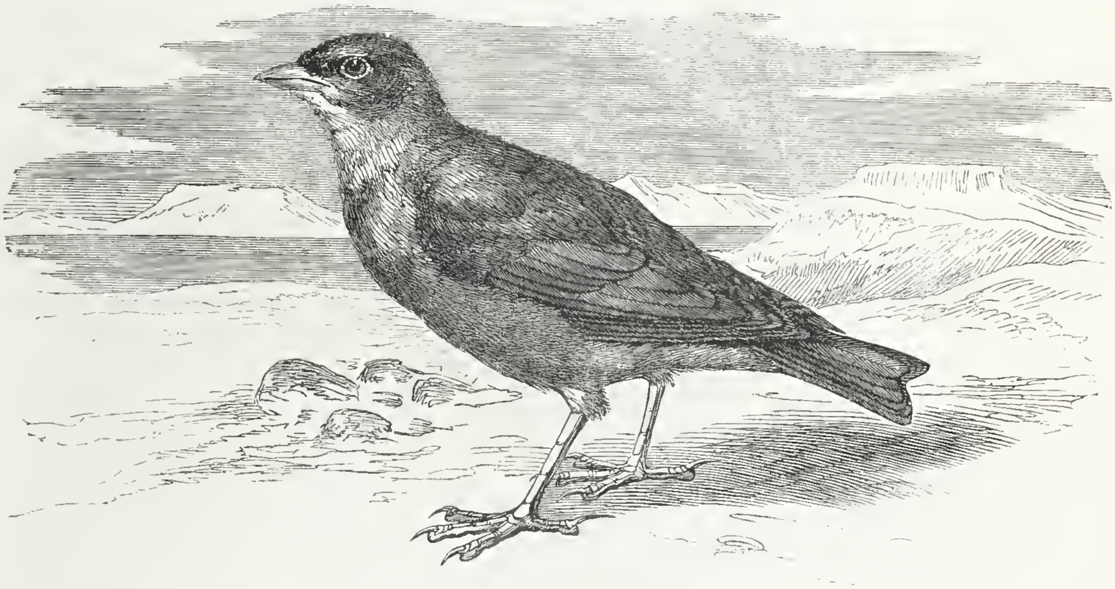
The BUNTING LARKS (*Pyrrhulauda*) may be regarded as the dwarfs of the Lark family.

They inhabit a large portion of Africa, including the eastern coast, and are remarkable not merely for the smallness of their size, but for their short thick beak and very large wings.

THE BLACK-HEADED BUNTING LARK.

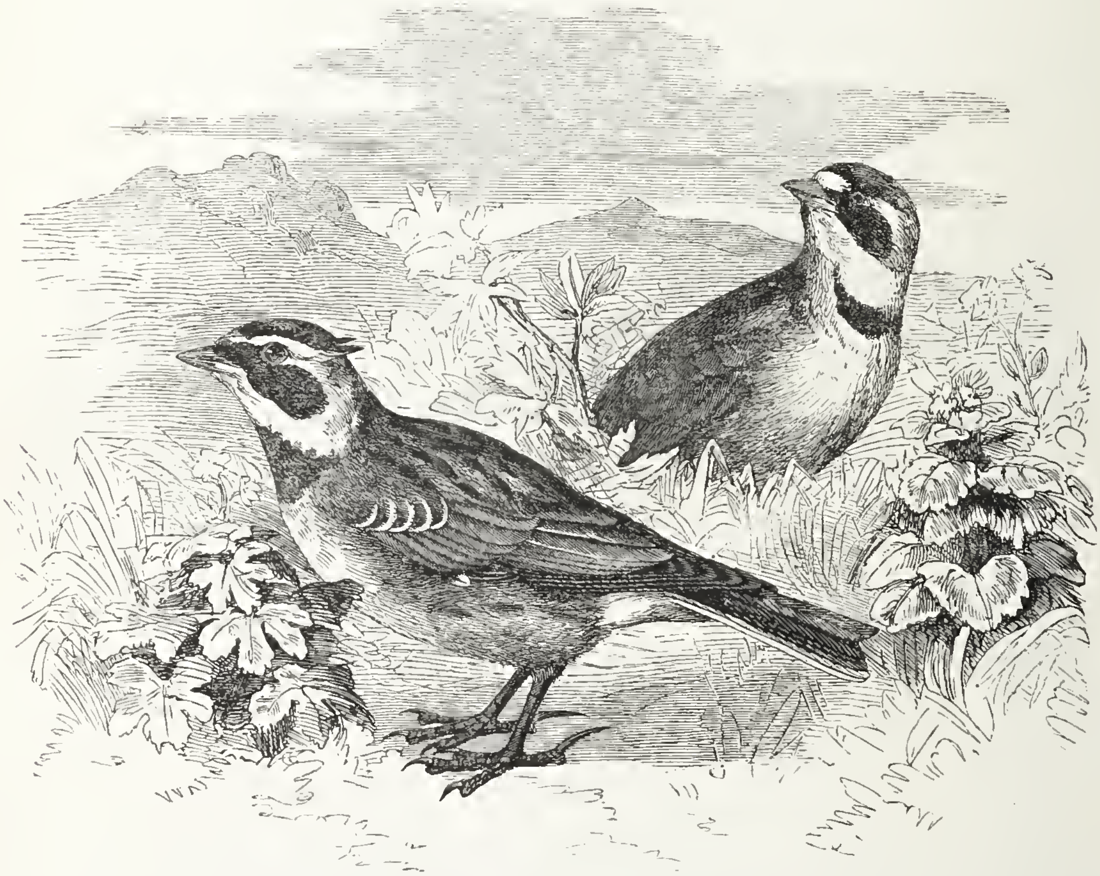
The Black-headed Bunting Lark (*Pyrrhulauda leucotis*) is black upon the head and lower portion of the body; the back is reddish brown, the cheeks white, as is a line that passes over the nape; the hips are dirty white, the wing-feathers brown, whilst those of the tail are half white and half brown; the eyes are light brown, and the beak and feet light yellow. Its length is five inches, the breadth nine and a quarter inches; the wing measures nearly three, and the tail about two inches.

This lively, elegant little bird is found extensively in all the African lowlands, beyond sixteen degrees north latitude, flying about freely in the immediate vicinity of man, and only avoiding such localities as high mountains or dense forests. In its habits it is by no means so brisk and alert as the Desert Lark, and its appearance anything but trim, as it runs or sits with drooping head, and wings hanging loosely from its side; but its flight is easy, and its movements when upon the ground far from clumsy, and very rapid. Its song is extremely simple, consisting generally of a monotonous repetition of the syllables *tit-tit*, and is uttered both when perched and when upon the wing. Our knowledge respecting the incubation of this species is extremely scanty, and we can only say that the little mates are much attached to each other, keep themselves separate from their kindred during the breeding season, and rejoin them when their parental duties are accomplished, forming parties which occasionally become very numerous. The plumage of the young differs considerably from that of the adult birds.


THE DESERT LARK (*Ammomanes deserti*).

THE ALPINE LARK.

The Alpine Lark, or Shore Lark (*Phileremos alpestris*), is one of the liveliest members of its family, both as relates to its plumage and disposition, and may be regarded as forming, with a few other species, a distinct group remarkable for the elongation of the body, and two appendages resembling feathery horns, with which the back of the head is furnished. The beak is straight, weak, and of moderate size; the wings long, with the second, third, and fourth primaries almost of equal length; the feet are strong, the toes of moderate size, and the hinder toe armed with a slightly curved, spur-like claw. The plumage of this bird is variegated in its tints; the length of its body is about seven inches, the breadth thirteen; the wings measure four, and the tail three inches. The Alpine Lark is an inhabitant of Northern Europe, and is easily recognisable by its elegant and striking appearance. Upon the back the feathers are of a reddish grey; the wings and tail black, bordered with dark brown; the breast and belly of a very pale yellowish grey, so light as to be nearly white. The markings upon the head are extremely beautiful: the brow is of a dull yellow, the region of the ear yellowish grey, enlivened by a bright brimstone-coloured line, which passes over the eyes, and gradually spreads till the throat and sides of the neck are of the same colour. The upper part of the breast is decorated with a triangular patch of velvety black, the cheeks, base of the beak, a streak upon the head, and the tufts being of the same rich deep shade. The eye is light brown, the beak and feet of a blueish tint. The coat of the nestlings is of a pale brownish grey upon the back, all the feathers edged with light yellow; the belly is white, and the individual feathers furnished with a pale yellow border; the wing and tail feathers are brown.



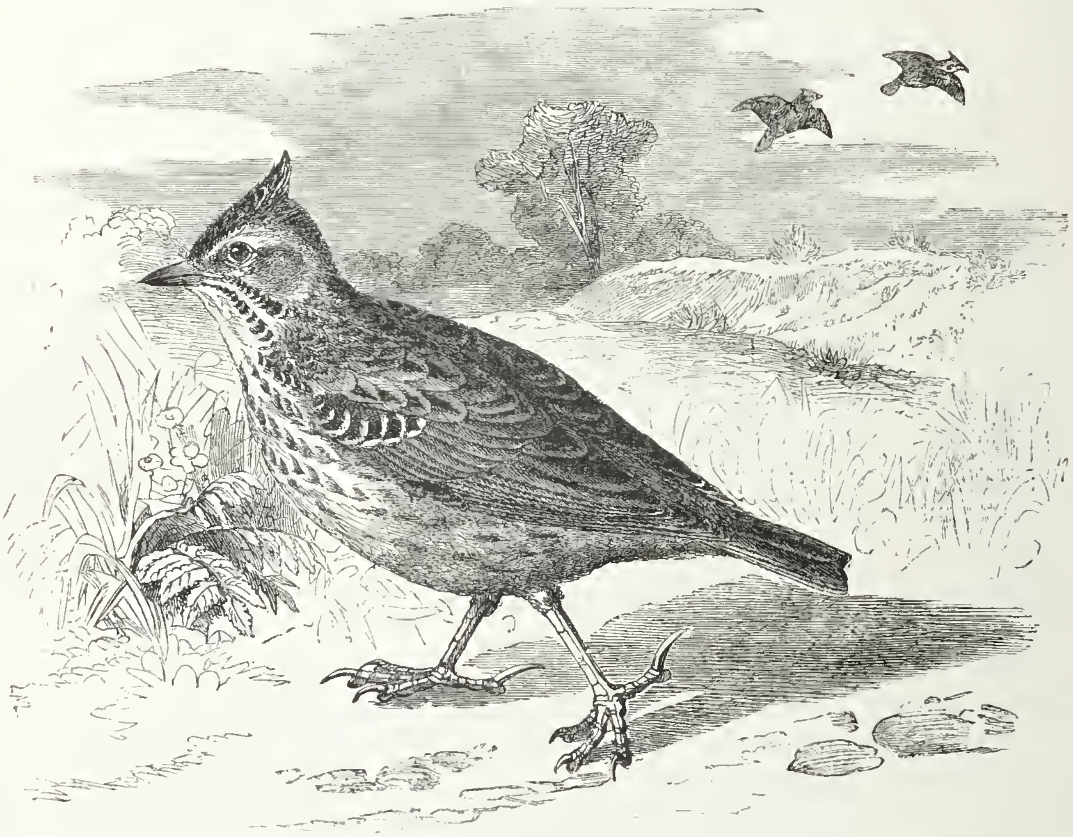
THE ALPINE LARK (*Phileremos alpestris*).

The name of the Alpine Lark is derived, not from the Swiss Alps, but from the mountains of Siberia, and the rest of Northern Europe, where, at the present day, it is met with in large numbers, though until within the last fifty years it was considered to be one of the rarest birds in our continent. According to our own observations, this species is not found at a greater elevation than 400 or 500 feet above the level of the sea. In Lapland it lives near the coast. These Larks quit the more northern countries at the end of October, and return about April, when they at once commence preparations for their young. The nest is most carefully constructed, and neatly lined with fine blades of grass, cotton wool, and other delicate materials, a slight hollow being prepared in the ground for its reception; in this the little cradle is so well concealed as to be only discoverable by a practised eye. The brood consists of from four to five eggs, of about the same size as those of the common Field Lark; they are usually yellow, and covered with very fine markings of a deeper shade, which take the form of a wreath around the broadest end; varieties are, however, occasionally found exhibiting grey streaks, or brown hair-like lines. In its habits this species closely resembles the Field Lark; indeed, the movements of the two are so exactly similar as to render it almost impossible to distinguish between them, either when on the ground or in the air: the Alpine Lark, however, sings either when perched or sitting upon a stone, and not, like its more southern representative the Field Lark, only when soaring in the air. It subsists chiefly upon seeds and insects, feeding its young principally upon the gnats and larvæ abounding in its favourite resorts.

The LARKS PROPER (*Alaudæ*) are distinguished from the birds just described by their more slender beaks, short wings, and simple plumage, but closely resemble them in other particulars.

THE TUFTED LARK.

The Tufted Lark (*Galerita cristata*) may be regarded as holding an intermediate position, by reason of the comparative strength of its beak, the shape of which, however, points it out as belonging to the Larks Proper; it is, moreover, easily recognisable by its compact body and tolerably strong feet, furnished with an almost straight claw upon the hinder toe, also by its large head and blunt wings, lax plumage, and, above all, by the crest it bears upon the vertex. The plumage is extremely various, and we are as yet unable to decide whether this diversity indicates distinct species, or is to be attributed to other causes; suffice it to say that these alterations in the colouring are usually accompanied by very observable differences both in the song and manners of the birds. We shall not here attempt to enter into a discussion on this point, but shall only observe that in one part of Egypt, where the soil is very dark, a species of Lark is found which, from the depths of its hues, has been called *Galerita nigricans*, whilst in the desert, not a mile from the same spot, a similar bird is met with almost of a golden colour. We mention this to show that in such a case the climate can in no way be the cause for so great a dissimilarity. In this group, therefore, every variety of tint, from deep yellowish grey to pale whitish yellow, may frequently be seen in birds apparently belonging to the same species. The Tufted Lark, so frequently met with in Germany, is usually reddish grey upon the upper part of its body; the throat is pale yellowish white, the rest of the under portion is brownish yellow, every feather being marked with a black line upon its shaft, except those upon the throat, wings, and a streak which passes over the eyes; the wings and tail-feathers are black or dark brown, bordered with rusty red. In the young birds, all the feathers upon the upper part of the coat are edged with white, and spotted at the tip with a dark shade; the eye is brown, the upper mandible deep grey, the lower one light grey, and the feet red. The length of this species is about six and three quarter inches, its breadth twelve and a half inches, the wing three and three quarter inches, and the tail two and a half inches. The female is not quite so large as her mate. We shall speak of this group collectively, as relates to their habits and mode of life, for what applies to one applies to all. The Tufted Larks are spread extensively over the whole of Europe, Central and Southern Asia, and Africa, being most numerous in the southern parts, where they not only inhabit the villages, but also frequent mountains and barren plains; whilst, as we have already mentioned, those of Africa are as constantly seen in the desert as in the cultivated districts. In Europe they may be considered as constant winter visitors to our barns and houses, hopping about them in company with Sparrows and Finches in the hope of obtaining food. Except during the period of incubation, all are quiet, unobtrusive birds, easily distinguished from our Field Lark by their crest, which is always held erect upon the head, but closely resembling their congeners in their flight and movements upon the ground. Their song is sweet and silvery in its tone, and though somewhat melancholy, is much admired ; many esteem the species found in the desert as the most gifted in this respect, but we imagine this merely to proceed from the fact that any pleasing sounds have a double charm when heard amidst the gloom of those dreary and usually silent wastes. Seeds, tender shoots, and insects constitute their principal food, the latter also forming the principal nourishment of the young birds. The nest, which is built in fields, vineyards, or gardens, is placed upon the ground, and so well concealed as to be not easily found, though often situated in localities much frequented by man. The eggs are yellow or reddish white, marked with numerous grey or yellow brown spots ; the first brood consists of from four to six eggs, the second seldom of more than three or four. Both sexes assist in the work of incubation, taking their place upon the eggs by turns ; the young are hatched in about a fortnight, and are carefully tended by both parents ; they remain close to the nest until they can fly with ease, taking refuge within it in case of danger. Compared with many members of the Lark family, the birds belonging to this group may be said to live in safety from the pursuit of man, as their flesh is not much esteemed as an article of food.



THE TUFTED LARK (*Galerita cristata*).

THE WOOD LARK.

The WOOD LARK (*Corys alauda arborea*) is distinguished by its inferior size, small wings, large, broad, and rounded tail, and scarcely perceptible tuft upon its head. Its length never exceeds six inches, its breadth is eleven and three-quarter inches, the wing measures three and a half inches, and the tail two inches. The female is smaller than her mate. The plumage is brownish yellow, shaded with rusty red; the belly white, striped with black as far as the breast; the four exterior tail-feathers are white, or of a yellowish shade; a light blue line passes over the head at the base of the upper mandible, running above the eyes, and around the crest. The feathers on the back of the young have a dark border.

THE SKYLARK (*Alauda arvensis*).

This beautiful bird is found extensively throughout Southern and Central Europe, and a large portion of Central Asia; its favourite haunts are, however, restricted to such barren plains and bare mountainous tracts as would offer few attractions to other members of the family. In its movements the Wood Lark is extremely vivacious and active; it runs with short steps over the ground, carrying its body and crest so erect as to give it an air of great self-importance and trimness. Should its promenade be disturbed by the appearance of a Hawk or other bird of prey, the little creature instantly lays itself flat upon the ground, if possible in a small hollow, and in this attitude will remain so still and motionless until the danger is past, as frequently to escape even the keen scrutiny of its formidable pursuer. Unlike its congeners, this species passes a considerable portion of its life perched amongst the branches of trees, from which peculiarity it derives its distinguishing name of Wood Lark. The breeding season commences with the spring, and numerous and violent are the battles between the male birds during this period of the year, for as their numbers usually exceed those of the females, it is a matter of no slight difficulty for each to find a mate. This important point, however, once settled, the males regain all their wonted gentleness, and confine their activity entirely to rendering themselves agreeable to the partner they have obtained with so much courage and perseverance. The nest, which is very compact and elaborate in its construction, is usually built in the grass, often under the shelter of a pine or juniper tree, and is composed of dry blades of fine grass. In shape, the little fabric resembles the half of a ball; its interior is warmly and neatly lined with soft materials for the reception of the eggs; these are usually four or five in number, white, and thickly strewn with grey or light brown markings (see Coloured Plate X., fig. 37). The female alone broods, but she is carefully tended during her seclusion by her mate, who also assists in taking care of the young, which are very soon capable of leaving the nest. No sooner is it vacated than another brood replaces the first, and it is only when the work of incubation is fully accomplished that the whole family unites to form a small flock, and fly about the country in search of food. During these expeditions many visits are paid to newly ploughed or stubble fields; and even during their autumnal migration, which commences about the end of October, entire days are often spent in exploring such spots in search of the precarious supply of seeds and insects, upon which they rely for food. These migratory excursions frequently extend as far as Africa, but by February the birds are with us again, and may be sometimes seen flying and singing cheerfully upon our mountains before the snow has fully disappeared from the surface of the ground. The song of the Wood Lark is extremely beautiful, and has inspired many eloquent writers with a theme; indeed, the impression made upon the mind of a traveller passing through the dreary plains inhabited by these birds, may well be of a most enthusiastic description, when, amidst the deep silence that surrounds him, this glorious little songster suddenly rises into the air, and commences pouring out an uninterrupted flow of exquisite music as it soars above him for half an hour at a time. Those who have been fortunate enough to listen to the Wood Lark in the stillness of the night, speak still more warmly of the effect its voice is capable of producing. We would, however, by no means lead our readers to suppose that the song of this bird can bear comparison with that of the Nightingale; nevertheless, whilst the latter is only heard during two months of the year, the former enlivens its native haunts from March to October, and, when caged, sings with such unflagging zeal and spirit as to render it a great favourite with all who have kept it in their aviaries. Large numbers of Wood Larks are captured by the mountaineers during the night by means of nets spread over the ground; few, however, survive captivity for more than two or three years.

THE SKYLARK.

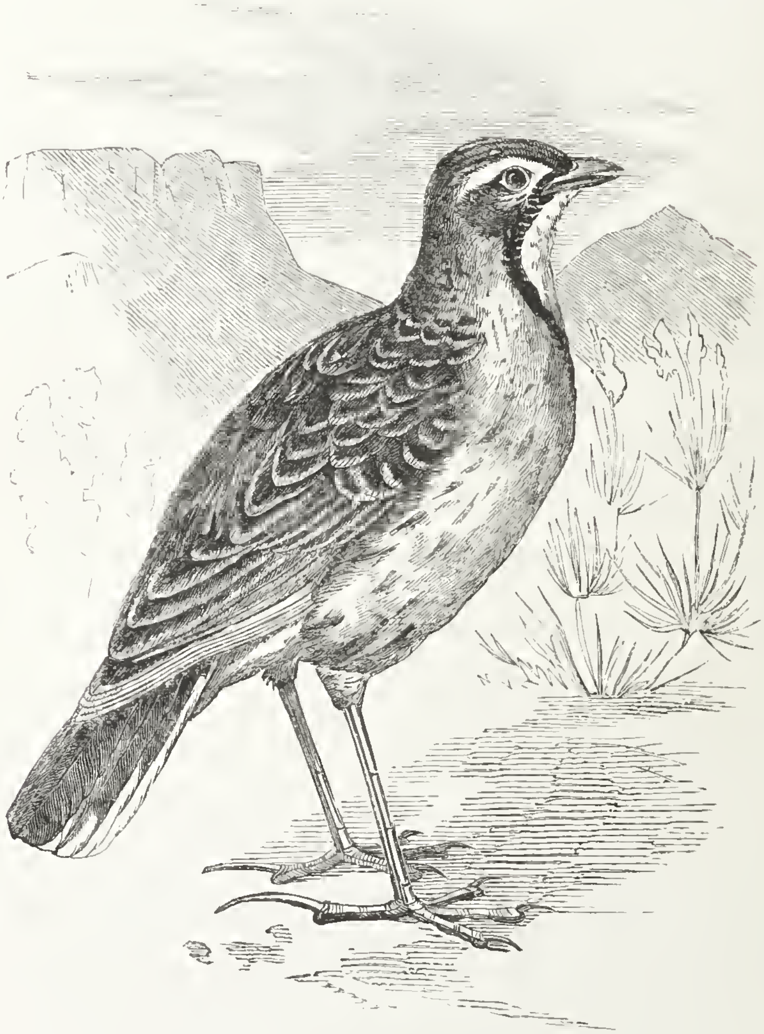
The Skylark, or Field Lark (*Alauda arvensis*), is distinguished from its congeners by the slender formation of its body, its weak short conical beak, and its somewhat pointed wings, the third quill of which is longer than the rest; its tail, of moderate length, is slightly excised at the extremity, and its delicate feet are furnished with somewhat short toes. The length of this species is about six inches and three-quarters, its breadth twelve inches and a quarter; the wing measures from three to four inches, and the tail from two inches and a half to two and three-quarters. The colour of the plumage is reddish brown upon the back, the under part of the body being white, the head distinctly spotted with brown, and the sides marked with dark streaks; the bridles and sides of the neck are of a lighter colour than the rest of the feathers; the exterior tail quills are white, as is the outer web of the second quill; the eye is reddish brown, the beak blueish grey, and the feet reddish grey.

The Skylark abounds over the whole continent of Europe and its contiguous islands; in Asia it is met with as far north as Kamschatka, and we think that it may now be numbered amongst North American birds, Audubon having introduced many species into that country, in the hope of their becoming naturalised. Though somewhat rarely seen, Field Larks have been known to reach Egypt in the course of their migrations. We ourselves have seen large flocks inhabiting the Castilian highlands, and they are said to be plentiful in Algiers and Greece during the colder parts of the year. In England the Lark is always regarded as the harbinger of spring, as with us it has usually returned and selected its home by the end of April. In its behaviour this species closely resembles its congeners, but, unlike some of them, it is extremely restless, running or flying from one spot to another with a constant change of flight or step, at one moment walking slowly, repeatedly ducking its head as it goes, and the next instant darting along with the rapidity of a plover. When in the air its evolutions are most varied. While singing it usually hovers gently, or rises rapidly with regular strokes of its wings, as it carols forth its well-known lay, which may be frequently heard at intervals from early morning until after sunset, the little songster appearing quite regardless of all other pleasures or desires, as it rises higher and higher towards the clouds, which sometimes seem to hide it from our view. The night is passed upon the ground, but at the first dawn of day, this "herald of the morn," as it has been aptly called, is amongst the first to greet the rising sun, its matin song being uttered whilst still perched upon the spot that has afforded it a shelter for the night. Like the bird we last described, the Skylark lives at peace with its brotherhood until the time for choosing a mate, at which season regular pitched battles are of constant occurrence between the males, who pull and tear each other in the air until the whole party fall struggling to the ground, usually, however, without any serious injury, and quite ready to renew the combat at the first sound of their antagonist's voice; the females, meanwhile, not only seem to enjoy the scene, but sometimes assist the mate they would prefer.

The nest is constructed about the beginning of May, the birds generally selecting a corn-field as most suitable for building purposes. They choose a piece of ground some two or three hundred paces in extent, and on this they settle, the whole party being as near together as the required space will allow, so that they thus form a kind of little colony. Male and female both assist in excavating the small cavity necessary for the safe deposit of the nest, which is built of stubble, blades of grass, or fibrous roots, the interior being occasionally lined with horsehair. In this humble retreat the female lays five or six eggs of a greenish yellow or reddish white tinge, covered with brown or grey spots (see Coloured Plate X., fig. 37). Both parents assist in the work of incubation, but the largest share devolves upon the female. The young leave the nest very shortly after being hatched, and seek shelter in the neighbouring fields, the old birds being immediately busied with the cares of a second family. Of all the numerous enemies by which the Skylarks are surrounded, man himself stands pre-eminent; hundreds of thousands are annually destroyed, merely to furnish a dainty food; and we learn from a continental writer, Elzholz, that they are so much sought after in Germany, that on one special occasion to which he refers 403,455 dead Larks were sold in the town of Leipsic alone, although, he tells us, by far the greater number caught in that part of the country were disposed of in the villages before they could reach the markets in the city. These birds are attracted by any light of unusual brightness, and are sometimes allured to their destruction by a rapidly revolving mirror. Amongst their feathered enemies the hawk known as the "Hobby" is the most formidable—indeed, so extreme is the terror evinced by the little songsters on its appearance, that, if escape by other means is impossible, they will seek refuge in a passing wagon or similar hiding-place; we ourselves knew an instance in which a Skylark, driven to desperation, sought protection from its dreaded foe upon the pommel of a horseman's saddle.

The STILTED LARKS (*Certhilaudæ*) are a group inhabiting Africa, remarkable for their elongated bodies, small heads, and large beaks, the upper mandible of which terminates in a slight hook; they are likewise distinguished by their comparatively short wings, long, rounded tail, and very high tarsi, furnished with toes and nails of moderate length.

The SPUR LARKS (*Macronyx*) are distinguished by their straight, short, and powerful beaks, elevated tarsi and feet, furnished with large toes, and by their variegated plumage. The large, somewhat curved nail upon the hinder toe must, however, be regarded as the peculiar characteristic of these birds.



THE SENTRY LARK (*Macronyx capensis*).

THE SENTRY LARK.

The Sentry Lark (*Macronyx capensis*) has received its name from the peculiar cry that it utters when disturbed, which sounds exactly like the *Qui vive!* employed as a challenge by French soldiers on guard. The plumage of this species is more variegated than that of almost any other Lark, the feathers upon the back being deep grey, edged with a lighter tint, and the exterior tail-feathers of a whitish shade half way up the inner web; the lower part of the body is of almost uniform reddish brown; a streak over the eyes is deep orange, as is the throat, the latter being surrounded by a black line; the eye is reddish brown, the beak dark grey, and the feet of a yellowish shade. The plumage of the female is paler, and the spur upon the foot smaller than in the male. The length of this bird is about seven inches, the wing four, and the tail two and three-quarter inches.

We learn from Le Vaillant that the Spur Lark is found abundantly throughout the whole of Southern Africa, where it principally frequents grassy plains, or the immediate vicinity of streams or brooks. The nest, which is formed of fine roots or similar materials, is concealed under a bush, and the brood consists of three or four blueish-white eggs, marked with reddish-brown spots, most thickly strewn over the broad end. The flesh of this species of Lark is much esteemed as an article of food by the settlers in South Africa.

The COURSER LARKS (*Alæmon*) may be regarded as the connecting link between the Larks and the Cursorial birds. Their bodies are much elongated, the beak remarkably long, weak, and perceptibly curved; the tarsus is double the length of the middle toe and nail; the tail is long, and straight at its extremity, and the wing comparatively short, the second, third, fourth, and fifth quills being longer than the rest.

THE DESERT COURSER LARK.

The **Desert Courser Lark** (*Alæmon desertorum*) is one of the members of this group with which we are most familiar, as it is frequently seen in Europe. In this bird the head and neck are of a greyish cream colour, the back and wing-covers being somewhat yellower; the belly is white, and the breast marked with a few blackish-brown primary streaks; the quills are white at their roots, and black at the tip, whilst the secondaries are entirely white, striped near the middle with black, thus producing a double white border to the wing; the centre feathers upon the tail-covers are of the same colour as the back, but black at the shaft, the exterior feathers having the outer web white, and the rest black, with a yellowish edge. The eye is light brown, the beak and feet pale grey. Both sexes are alike in plumage, but the female is not quite so large as her mate. The length of this species is about eight inches, the wing four and a half, and the tail two inches.

According to our own observation, this very remarkable bird is met with extensively between Cairo and Suez, but is by no means numerous in the desert, and quite unknown in the region of the steppes; we occasionally saw it in small parties, but usually living in pairs, which appeared to associate peacefully with each other. As we have said, the Desert Courser Lark much resembles the Cursorial birds in many particulars. It runs with great rapidity, in the same manner as the Isabella Courser (*Cursorius Isabellinus*), and when in flight hovers or rises into the air with a bold stroke of the wings. When about to alight it poises itself for some moments, and then, closing its wings, comes rapidly to the ground, repeating this form of ascent and descent several times in quick succession, apparently solely for the purpose of affording pleasure to its admiring mate. The song of these birds is loud and twittering. The nest we have never seen, and our information as to the food upon which they subsist is very slight. Insects, we believe, constitute their principal diet, and they probably eat some kinds of seed. They exhibit no fear of man, and may often be seen running almost tame about the streets and court-yards of Suez and Cairo.

RAVENS (*Coracirostres*).

We are now about to introduce our readers to a race of Birds, so nearly related to the *Passeres*, tnat many naturalists have regarded them as constituting a subdivision of that order. We, on the contrary, following our intention of rendering our classification as simple as possible, have thought it best to assign them an entirely separate place, principally in consideration of the unmistakable peculiarity of their plumage.

The order CORACIROSTRES, according to this view, comprises a large number of species, varying in size from a Raven to a Finch, but all presenting the same characteristic structure: all have elongated yet powerful bodies, large heads, short necks, and wings of moderate size, or slightly lengthened, pointed or rounded at the tip. The tail is formed of twelve feathers, and is very various in its shape and size; the feet are strong, the toes short, armed with stout claws, and the tarsi covered with scaly plates; the beak is long, occasionally equal to or even exceeding the head in length, but sometimes much shorter; its shape is almost straight, more or less conical, sometimes arched at its roof, the upper mandible being slightly bent towards the point, but not terminated by a hook. The plumage is short in proportion to the size of the bird, and moderately compact and thick. In some cases the ornamentation is very peculiar, individual feathers being much elongated and stripped of their web. Very great diversity is observable in the coloration of these birds: black is generally predominant, but yellow and white are frequently employed, and green, brown, or red occasionally but more rarely intermingled; these various colours being often harmonised and enriched by a peculiar and splendid metallic brilliancy. The internal structure of this race bears a strong resemblance to what we have seen in the Passerine Order. The skeleton is powerful, many of its bones being filled with air. The back-bone very constantly consists of twelve cervical, eight dorsal, ten or eleven pelvic, and seven to eight caudal vertebræ. The vocal muscles of the lower larynx are well developed. The gullet does not enlarge into a crop, and the gizzard is never so muscular as in the Passerine birds; the various senses are very equally developed, and the brain is large. According to some naturalists, the Ravens must be regarded as the most perfectly constructed of the feathered tribe; and we are not inclined to dispute this opinion: certainly, few birds can compare with them either in capacity or bodily powers, for they run, fly, or climb with equal facility, and possess a remarkably flexible and copious voice; indeed, some families display such an extremely high degree of development both as regards their intelligence and strength, as to justify us in saying that they possess the attributes of the Parrots and Falcons combined. In the habits of the smaller species of this order there is much that reminds us of the Finches or Buntings; but its larger members are distinguished by many peculiarities. They are for the most part dexterous thieves, achieving their object with a boldness and cunning that is truly surprising, frequently stealing, as it were, for the mere pleasure afforded them by the act, rather than from any necessity for the object purloined. All parts of the world are inhabited by various tribes of this extensive division; some of them may perhaps be regarded as for the most part frequenting woodland districts; others are equally at home upon mountain ranges or lowlands, the sea-coast, or barren plains; and they are constantly met with either in the solitary desert, or dwelling in the immediate vicinity of man. Southern countries, however, afford the most congenial home to these birds, which, though appearing in all latitudes, are more numerous in the warmer portions of the earth than in the north. They live everywhere unmolested by man, obtaining a plentiful supply of food in any circumstances, seeing that their easily satisfied stomachs are equally ready to appropriate all kinds of nourishment. In their conduct the Ravens display an intelligence that cannot fail to interest every observer, and most curious are the means by which they seem to impart and receive hints or suggestions from each other. Some species will assemble at a given hour upon a certain tree, and enter at once, as it would seem, upon a full discussion of the events of the day, the old birds instructing the younger members of the party, who appear to profit by the lessons thus received; superior instinct or talent is sure to find promotion amongst them, the most intelligent being at once recognised as leaders of the rest of the flock. Their habits are social, but each bird may be said to lead an independent life, though ready at a moment's notice to join its companions in defence or attack. The structure of their nests is very various; some are placed apart, and separate from each other; others in close vicinity; the only interruption to the general harmony occurring during the breeding season, when the busy couples are all clamouring and struggling for favourite building places or necessary materials. At such times those who cannot take what they want by force, employ wonderful dexterity and cunning in abstracting the coveted object, should its possessor be for one moment off his guard. The brood consists of from four to six eggs. Both parents assist in the work of incubation, the male stealing occasionally from the side of his mate to pass an hour in chattering or singing with a select party of friends, perched upon some neighbouring tree. The young remain for a considerable time under the care and tuition of their parents, who rarely brood more than once during the summer.

For the most part, the Ravens must be considered as eminently useful, destroying, as they do, large quantities of noxious insects, and thus rendering great service to man. Some of the larger members of the order, on the contrary, are distinguished by a cruelty and rapacity that render them extremely destructive to the smaller quadrupeds, causing them to be regarded as deserving of human vengeance, and fit objects for relentless persecution. When caged, the Ravens are many of them extremely interesting, as they will not only learn to imitate tunes, but some of them acquire the power of repeating whole sentences with as great facility as does the Parrot, and soon become perfectly tame. The flesh of many species is well flavoured, and the feathers are employed for a variety of purposes.

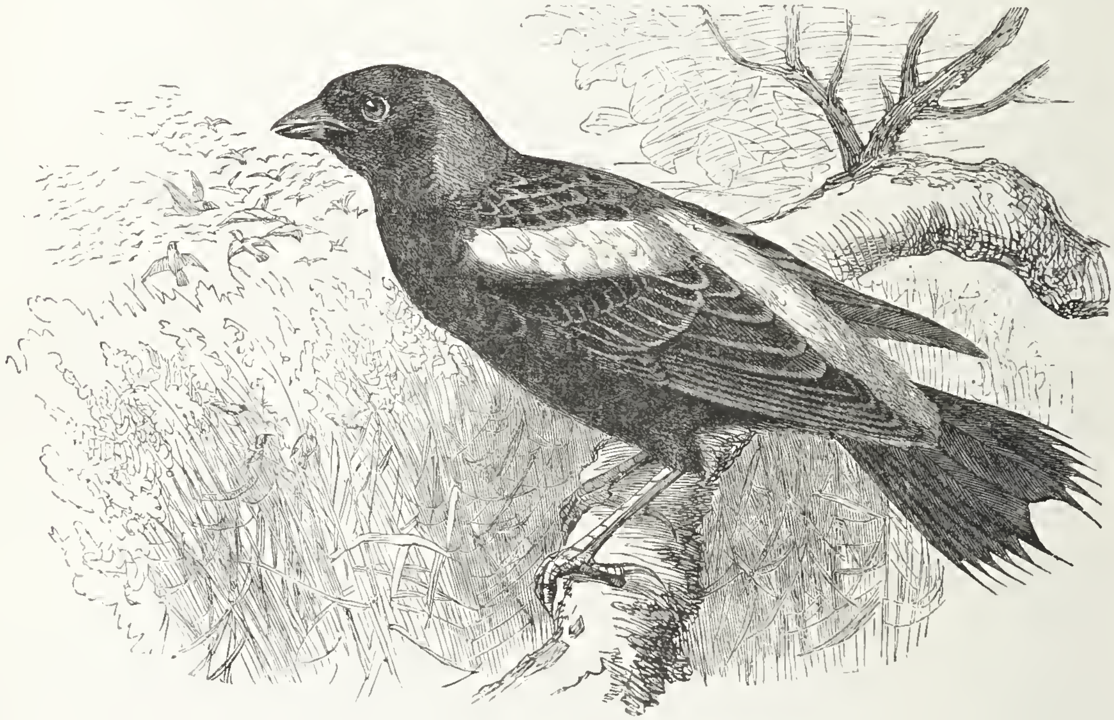
We shall divide the order of Ravens into four groups, all distinctly recognisable by some marked peculiarity of structure, but resembling each other in their general mode of life and habits. These divisions we shall distinguish as the Starlings, the Birds of Paradise, the Ravens Proper, and the Plantain Eaters, assigning to the Starlings the first place, as being superior to the rest in their vocal powers.

THE STARLINGS.

The Starlings (*Sturnidæ*) must be ranked among the smaller birds belonging to this order, and are eminently distinguished for their high endowments. Their body is elongated, the wings of moderate size, the tail seldom of any great length, usually short and straight, the tarsus of medium height, the beak long, conical, and weak. The plumage is composed of small harsh feathers, much variegated in their hues, and frequently presenting a brilliant gloss. With the exception of Australia, the members of this family are distributed over the entire world; each continent and country possessing its peculiar species: America, more especially, is particularly rich in different races of Starlings.

The YELLOW STARLINGS (*Icteri*) are birds varying in size from that of a Crow to that of a

Finch. Their bodies are elongated, but powerfully built, the beak conical, the wings and tail of moderate length, the tarsi strong, and the plumage soft and brilliant, black, gold, or red preponderating in its coloration; the beak is rounded and thick towards its base, and without any notch or hook at the apex, its upper portion being prolonged like a shield among the feathers of the forehead. The fourth quill of the wings is longer than the rest; the tail, which is half covered by the wings when the bird is at rest, is rounded or graduated towards its extremity; the tarsi are longer than the middle toes, and covered in front with scaly plates; the toes are of moderate length, armed with strong, bent, and pointed nails. In some species the feathers on the top of the head take the form of a tuft, and in others the cheeks are left bare. All the members of this group are social, cheerful, and active; some of them are rich in song. Their favourite haunts are in the woods, where they subsist principally upon insects, snails, fruit, or seeds. Their nests are built with care, and display considerable artistic skill.



THE BOBLINK (*Dolichonyx oryzivorus*).

The TROOPIALS (*Agelaii*) include the smallest members of the last-mentioned group. In these birds the roof of the beak is quite straight, and its margins bent at an angle towards the gape; the hinder toe is furnished with a spur-like claw. The plumage of the young differs considerably from that of the parent birds, and is very various in its colours and markings.

THE RICE-BIRD.

The BOBLINK, or RICE BIRD (*Dolichonyx oryzivorus*), possesses so many features in common with both Finches and Starlings as to render it difficult to decide amongst which it should really be placed. This species is very numerous in North America, where it is much detested on account of the serious damage it does to the fields of ripe grain. The principal characteristic of the group of RICE EATERS to which this bird belongs is their strong, conical beak, which is of moderate length, and much compressed towards the sides, the upper mandible being narrower than the lower portion, and lying, as it were, enclosed within its edges. The body is compact, the head large, the wings of moderate size, the second quill being longer than the rest; the tail is of great length, and each individual feather composing it terminates in a sharp point; the feet are not large, but powerful, and the plumage compact and glossy. The body of the Boblink measures seven inches, its breadth being about eleven inches, the wing three and a half, and the tail two and a half inches. The plumage varies considerably at different seasons of the year. During the period of incubation the male is black upon the head, the lower portion of the body, and the tail; the nape is brownish yellow, and the feathers upon the back black, with a broad yellow margin; the shoulders and rump are of a yellowish white; the wing-covers and quills are black, bordered with yellow. The eye is brown, the upper mandible dark brown, and the lower one blueish grey; the feet are light blue. The female is smaller than her mate, of a pale yellowish brown upon the back, the shafts of the feathers being marked with a dark tinge; the lower parts of the body are of a pale greyish yellow, the sides streaked in the same manner, as is the back; the bridles are brown, and a yellow line passes over the eyes; the quills and tail-feathers are much lighter than in the gala dress of her mate. During the winter months the male bird wears a coat closely resembling that of the female. The young are similar to the mother, but all their tints are greyer and paler.

When upon the ground, the movements of this species may be described as being more like a step than a hop; its flight is light and graceful, and its powers of climbing amongst the stubble by no means inferior to those of the Reed Sparrow. The Boblink (so called from its well-known cry) appears regularly in North America during the summer months, visiting the West Indies and the northern parts of South America in the course of its migrations. About May these birds begin to make their appearance in New York by small parties, which gradually increase in numbers until they literally swarm throughout the whole State—indeed, Audubon tells us that it would be impossible to find a field unoccupied by these destructive visitors. Even the breeding season does not interfere with their social relations, for the nests are built near together upon the ground, each pair, however, keeping possession of a distinct territory, in the centre of which the little home is made with much art, amidst the grass or stubble. The cares of the brood devolve entirely upon the females, their mates, meanwhile, disporting themselves over the neighbouring fields, and making the air resound with their endeavours to rival each other in the beauty of their song, which is so rich and varied in its tones as frequently to lead the hearer to imagine that he is listening to the voices of many singers, when in reality the sounds are produced by a solitary bird. Wilson describes the performance of the Boblink as resembling a series of notes struck upon all parts of the pianoforte in rapid succession, and tells us that the effect, though strange, is extremely pleasing. When perched, the male accompanies its song by a variety of animated gestures and movements of its wings. The eggs are laid about the end of May; they are from four to six in number, white, and thickly marked with dark blue or black spots irregularly distributed. Each couple breeds but once during the year. The young are fed upon insects: they rapidly attain their full size, and are ready to join their parents in the work of destruction about to commence. No sooner is the period of incubation over than the nature of these birds seems to undergo an entire change. The male completely loses his song, and doffs his brilliant coat, which is replaced by a comparatively quiet dress, resembling that of the female, and all exchange their hitherto harmless demeanour for a life of active and really formidable mischief. In vain are every means adopted by the inhabitants to scare the destructive flocks from their fields of young corn; hundreds of thousands are shot, but with little result beyond driving the enemy from one district to take refuge in another, and it is only when the work of devastation has been fully carried out that these enormous swarms leave the locality to carry on their terrible raids in another part of the country. It would seem as though the hatred with which the farmers regard this bird had made them entirely overlook the service it renders them during other seasons of the year by the enormous quantities of insects it consumes; even the great beauty of its song has not induced them to tame it.

The MARSH TROOPIALS (*Agelaius*) are quite as numerous, and almost as destructive as the members of the last-mentioned group. In these birds the beak is long, conical, very pointed, and slightly compressed, the body powerful, the wings of moderate size, their second and third quills being longer than the rest; the tail moderate, rounded at its extremity, and the plumage soft and glossy.

THE RED-WINGED TROOPIAL.

The RED-WINGED TROOPIAL (*Agelaius Phœniceus*) is almost as abundant in North America as is the Rice Bird, and, though its plumage is extremely simple, it is remarkably beautiful. During the breeding season the coat of the male is deep black, except upon the shoulders, which are of a rich scarlet; the eyes are brown, and the feet and beak blueish black. The female is blackish brown upon the upper part of the body, the belly greyish brown, each feather being edged with yellowish grey; the throat and cheeks are light greyish yellow, streaked with a deeper shade; its body is about eight and a half inches long, its breadth thirteen and a half inches; the wing measures four and a half inches.

These birds are found extensively throughout the whole of North America, and appear regularly in the United States during the summer months, but are most numerous in the northern provinces. Audubon tells us that the "Redwings" leave the south as soon as spring appears, performing their migrations in flocks of considerable extent; the males leading the way, and singing almost without intermission, as though to induce the females to follow them; the different parties rest for the night upon the tops of high trees, and greet the morning with an animated song before again proceeding on their journey. No sooner have the females made their appearance than the work of choosing a mate commences, a proceeding attended with no small difficulty, as the males far exceed the females in number. When mated the little couple retires from the rest of the flock, and sets about the construction of the nest, which is built of dry reeds, lined with horsehair or fine grass, and placed under a bush at the edge of a pond or in a marshy field. The eggs (see Coloured Plate IV., fig. 28), from four to six in number, are of a light brown colour, spotted with a darker shade. The male bird exhibits the greatest anxiety for the welfare of its little partner, and, should they be molested, will fly close up to the intruder, as though to divert attention from the nest, or else will perch immediately above its mate, uttering such pitiful cries of distress as will sometimes deter the unwelcome visitor from approaching nearer. These birds produce two broods during the summer, the second being ready to leave the nest by the beginning of August, when they congregate in flocks, numbering many thousands, and immediately commence their depredations in the fields, destroying the crops in the most terrible manner, despite the utmost efforts used to drive them from the locality, which they only quit when the corn becomes too ripe to suit their requirements. Like most of their congeners, they usually pass the night amongst the beds of reeds, which afford them temporary protection from the attacks of the infuriated farmers, by whom incredible numbers are slaughtered, without making any apparent diminution in the flocks, which occasionally may literally be said to darken the sky. Except during the time when the corn is young and tender, the habits of the Red-wing are by no means such as to render them objects of persecution, for they may be seen hopping after the plough, and clearing the field of multitudes of noxious and destructive insects; these services, however, are entirely overlooked by the American husbandmen, who have no eyes for their beauty and no ears for their song, but pursue them with unrelenting hostility.

The COW-BIRDS (*Molothrus*) constitute a group of Starlings distinguished by their short, conical, sharply-pointed beaks, the upper mandible of which is almost straight, and compressed towards its edges; the wings are tolerably long, the three first feathers being of nearly equal length. The tail is of moderate size, and straight at its extremity, the individual quills becoming broader towards their tip; the tarsi are compact, but rather high, and the soft plumage, which in the young bird is brown, at a later period turns to a bright metallic blue.

THE COW STARLING.

The Cow Starling (*Molothrus Icterus pecoris*) is the best known, or, perhaps, we should say, the most *notorious* of these birds. The plumage of the male is simple in its coloration, but by no means without beauty; the head and neck are brown, the rest of the plumage brownish black, with a blueish gloss upon the breast, and a green and blue shimmer on the back; the eye is dark brown, the beak and feet brownish black. The length of this species is about seven inches, and the span of its wings eleven and a half inches; the female is rather smaller, and her colour almost entirely brown, the lower part of the body being of a lighter shade than the back.

The Cow Starlings inhabit North America, where they frequent such marshy spots as are at no great distance from pastures containing cows or horses, whose backs they relieve from many tormenting parasites. In the northern parts of the United States these birds make their appearance in small flocks about the end of March, frequently associating with parties of red-winged Troopials, and gradually increasing in numbers until their swarms become really formidable; by the end of September they have left the country in company with many of their feathered companions. Though bearing a great resemblance to their congeners, there is much that is decidedly peculiar in their habits, more especially as relates to the rearing of their young. Anything like family affection would seem to be quite unknown amongst them, both male and female having many mates, and living in such entire indifference as to each other's movements that the withdrawal of one of the party does not seem to excite the slightest attention. Their eggs, moreover, are laid, like those of the Cuckoo, in the nest of any other bird who may for a moment have left its young charge; on more than one occasion we have been much amused in following and watching a female Cow Starling as she flew anxiously about in the woods, until she succeeded in finding a nest into which she might steal and deposit her eggs during the absence of its owner. Should this, however, not be possible, force is often used to drive the weaker bird from its brood until the object is accomplished. The egg of this species is small as compared with the size of the mother; it is usually pale blueish grey, marked with dark brown spots and streaks, which are the most numerous at the broadest end (see Coloured Plate IV., fig. 3). According to Audubon, the Cow-bird never deposits more than one egg at a time; the resulting progeny, he tells us, is soon hatched, and receives every care from its foster parents, who are, however, deserted by their strange nursling as soon as it has strength enough to fly.

The YELLOW or GOLDEN STARLINGS (*Icteri*) are distinguished from the rest of the family by their superior size, and long, slender beaks, which are straight at the ridge and sharply pointed towards the extremity; the wings are of moderate size, the tail long, graduated at the sides, and rounded at its tip; the legs are strong, the toes powerful, and armed with sharp and crooked claws. The plumage is principally of a yellow colour, the female in this respect resembling her mate, but the young birds never exhibit the bunting-like markings that distinguish others of the family.

The "Yellow Birds," as they are usually denominated, are inhabitants of the southern portions of America, though by no means rare in its more northern countries, and must be regarded as holding the same place in the Starling family as the Weaver Birds do amongst Finches, for their nests are built with great artistic skill, and frequently hang in considerable numbers from the same tree or branch. In their habits they are extremely social, and are much prized by the Americans, either when in their favourite woods or confined in a cage, on account of their gay plumage and the beauty of their song. The food of these birds consists principally of insects and fruit, but at some seasons of the year they will also eat corn and devour large quantities of the softer kinds of maggots and larvæ, for which they search amidst the refuse scattered on the roads.

THE JAMAICA YELLOW BIRD.

The Jamaica Yellow Bird, or Soffre (*Icterus Jamacaii*), is one of the most beautiful members of this family, found, as its name implies, in the islands of the West Indies, but likewise abounding in Brazil and Guiana. In this species the head, throat, back, and neck are black, the nape and lower portion of the body bright orange. A portion of the hinder secondary quills is edged with white underneath, and the small wing-covers are marked with orange at the shoulder; the lower wing-covers are of a paler yellow. The beak is brilliant black, with a lead-coloured spot upon the lower mandible; the feet are of a blueish flesh colour, the eyes light yellow; the ophthalmic region is bare, and of a greenish hue; the coat of the female is lighter than that of her mate, and the young birds are of a still paler tint; the beak of the latter is brown, the feet pale yellowish brown, and the wings edged with broad grey lines. The length of this bird is about ten inches, its breadth thirteen, and the wing and tail four and a half inches.

THE RED-WINGED TROOPIAL (*Agelaius Phœniceus*).

All observers who have seen this magnificent species in its wild state speak of it with enthusiasm. The Prince von Wied describes it as looking like a flashing flame as it darts hither and thither amongst the dark foliage; its movements are lively and elegant, and its voice so flexible as to be capable of imitating the songs of many other birds. The depths of the forests afford these brilliant creatures the shelter they prefer, and thither they resort in pairs during the period of incubation; at other seasons of the year they fly about in small parties, which subsist principally upon insects or various kinds of fruit, and do great damage to the orange and banana trees. We learn from the same author that he found the nest of a Yellow Bird woven between the branches of a tree and hanging some eight or nine feet above the ground; the little structure was formed of small twigs, and in shape resembled a ball, the entrance being through a hole in the side. Schomburghk tells us that the wooded banks of the rivers resound morning and evening with the melodious but plaintive notes of this sweet songster, and that it is sought after by the settlers for purposes of domestication, though its life in confinement is but of short duration: this writer adds that the Yellow Bird becomes so tame in Brazil, that its cage may be kept open without any danger of its returning to its native haunts; but in this statement we can by no means agree, our own observations having led us to a contrary opinion; such as we have seen in captivity have almost invariably proved themselves to be very untamable, falling upon and destroying the nest or young of other birds, and domineering over the larger species of Starlings and Thrushes with so much violence as to ensure to themselves undisputed possession of the food or sleeping perch, as none of their companions dared to approach until the wants of these tyrants of the aviary were satisfied: to the keepers alone they showed the more amiable side of their character, and were so shy before strangers as to refuse to sing if the listener was not concealed from view.

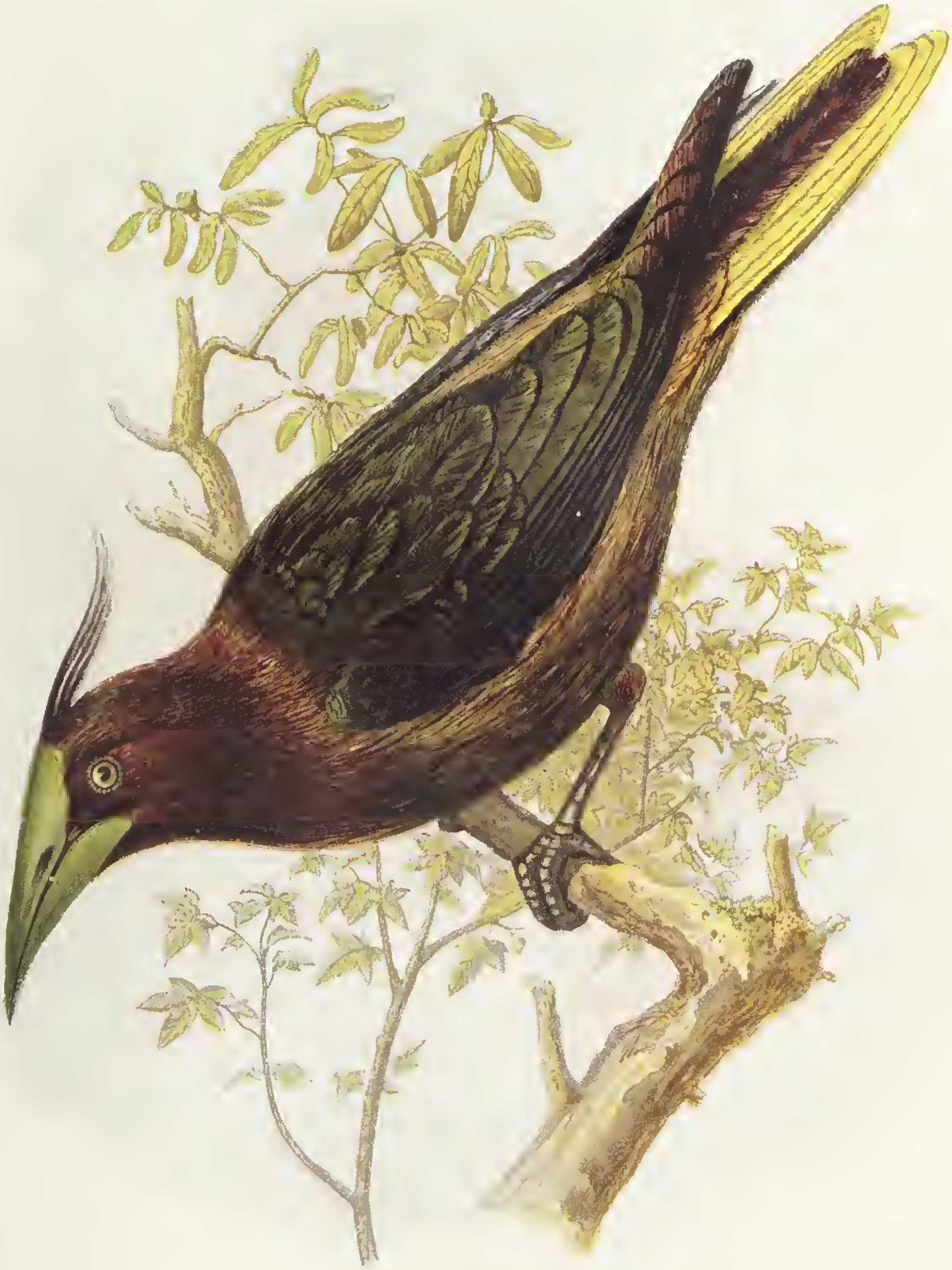
THE COW STARLING (*Molothrus pecoris*).

THE BALTIMORE GOLDEN STARLING.

The BALTIMORE GOLDEN STARLING (*Hyphantes Baltimore*), a North American species, is the member of this group with which we are most familiar. In the general construction of its body it closely resembles the Yellow Bird last described, but the ridge of the beak is slightly curved; also the wings are longer and the tail shorter than in that species. The plumage of the male is black upon the head, throat, and upper wing-covers, as are the quills and middle tail-feathers; the under parts of the body and small wing-covers are bright orange, the back and breast a light scarlet: the exterior tail-feathers are black from the root, but their lower half is bright orange. The large upper wing-covers are tipped with white, and the quills bordered with a white margin; the eye is orange, the beak and feet light grey. In the young male all the colours are paler: the iris is light brown, and the upper mandible brownish black. The size of this species is about seven and three-quarter inches long, its breadth twelve inches.

According to Audubon, the Baltimore Bird is met with throughout the whole of North America as far as fifty-five degrees north latitude, being very numerous in some parts, but only visiting others in the course of its migrations. Its favourite haunts are in hilly districts, to which it resorts as soon as spring appears, to discharge the duties attendant on incubation. The nest is suspended from a slender twig, and is most artistically woven, but its construction varies with the climate. In the Southern States the birds prefer the northern side of the tree, and form their little cradle of moss so loosely intertwined as to allow the air to penetrate; while those that inhabit the Northern States prefer such branches as are most exposed to the rays of the sun, and render their home warm and snug by lining it with soft and fine materials. The construction of these remarkable nests is very peculiar; the builders begin by seeking for all kinds of threads or fibres about the surrounding fields and villages, and frequently do very serious damage by their depredations among the skeins of thread or cotton laid out in the fields to bleach: all the odds and ends of cotton, silk, or thread thus collected are woven into the nest, amongst other materials, with a compactness and dexterity that is truly surprising. The female lays from four to six eggs, of a pale green colour, marked with dark spots or streaks. The young are hatched within a fortnight, and are fully fledged in about three weeks after their birth, from which period they begin to climb in and out of the nest, and hang from the outside after the manner of Woodpeckers; they then accompany their parents, by whom they are fed and tended for another fortnight, before they are capable of supporting themselves. In the more southern parts of North America these birds frequently produce two broods within the year; during the spring they subsist principally upon various insects, usually caught upon the wing; but in summer they prefer fruit of different kinds, and do great damage to the orange and banana trees. This species commences its migrations early in the autumn, flying generally alone, and high in the air, uttering loud cries and hurrying along with great rapidity; when evening approaches it seeks food and shelter upon a tree, where it passes the night; it then takes a hasty meal and resumes its onward journey. The movements of the Baltimore Bird are regular and graceful; its flight is direct and continuous; its step, when upon the ground, easy; and its adroitness in climbing amongst the branches such as to bear comparison with the activity of the Titmouse. The song is simple, but pleasing.

We select the CASSICANS (*Cassici*) as taking rank next in order to the *Icteri*, being, like them, of slender shape, with long, pointed, conical beaks, long, tapering wings, long and graduated tails, rounded at the extremity, and formed of broad feathers. The feet are strong, the toes large and armed with sharp claws. The plumage is thick, smooth, and glossy, principally black, heightened to greater richness by an intermixture of yellow. In size they resemble our Jackdaw. (See Coloured Plate VI.)



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WAGLER'S CASSICUS. — Cassicus Wagleri.

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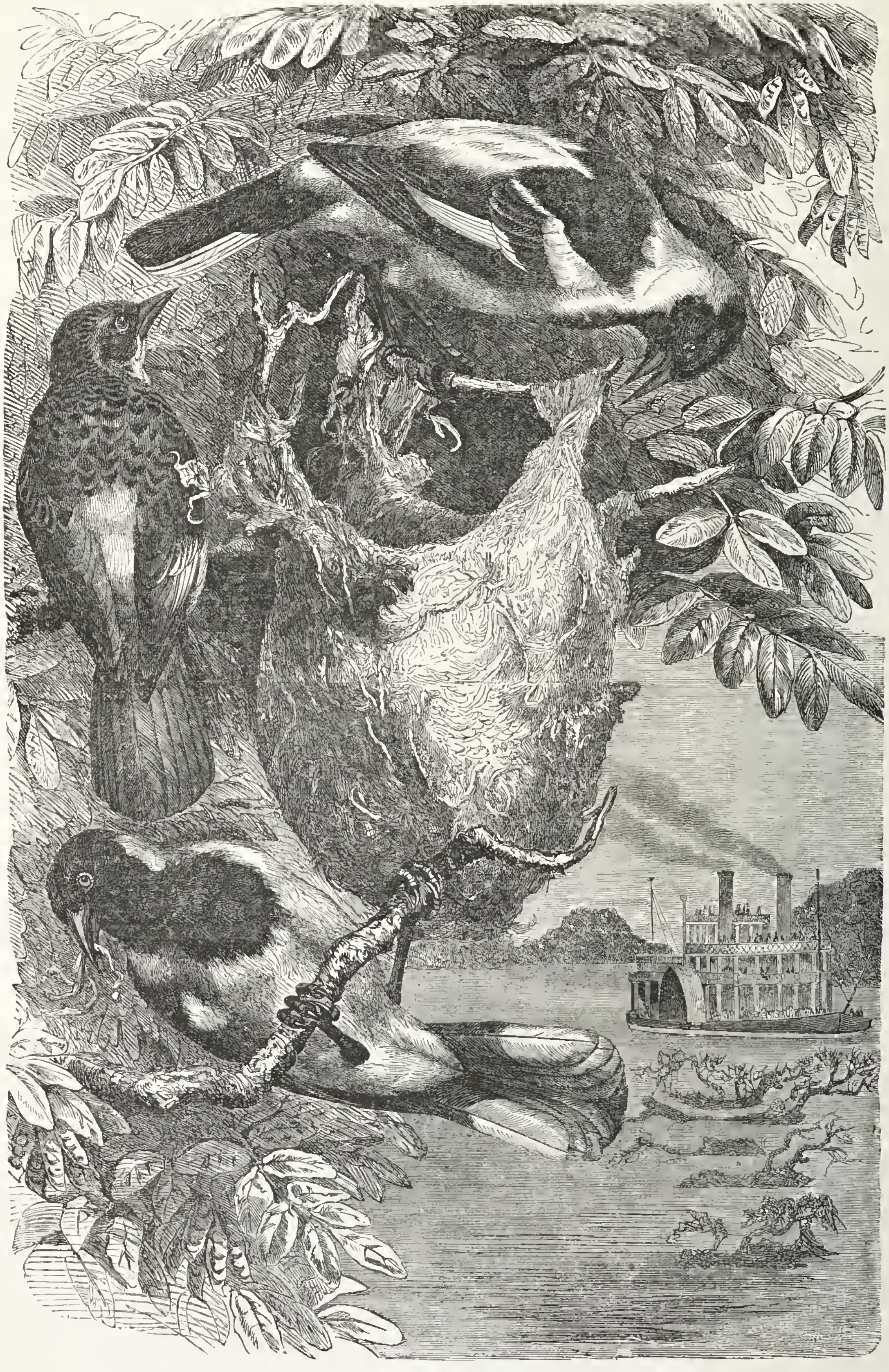
The Cassicans hold pretty much the same place in America as that occupied by the Crows in European countries. In their habits they are lively and active, beautiful in appearance, and, though essentially occupants of trees, resemble the Yellow Birds in many particulars, like them frequenting fields of ripe corn, and doing considerable damage, without any apparent fear of the wrath of the proprietors. When in the woods, insects and seeds constitute their principal fare, and they will occasionally devour fruit. The voice of this species is not so pleasing as that of the Soffre, but it possesses very great flexibility—indeed, Schomburghk tells us that it can not only imitate the note of every other songster, but the cry of any animal, producing at times such a strange medley of sounds as to astound its hearers, who scarcely believe it possible that a single bird can alternately bleat like a sheep, crow like a cock, or scream like a turkey, all these various noises being accompanied by such extraordinary contortions of the whole body as cannot fail to excite laughter in those who witness this strange performance.

Scarcely less remarkable is the manner in which the Cassicans construct their nests. Like the Weaver Bird, they build regular settlements, suspending their artistically woven cradles in large numbers from the same tree, and very frequently in the immediate vicinity of other species. As with the Weaver Bird, these nests are inhabited from year to year, and repaired every season for the reception of a new family. In shape they are not unlike the large bags formerly used to carry shot, and are so lightly constructed that their walls may be seen through. Great patience and skill are exhibited in the manufacture of these abodes, some species only employing such materials as linen thread, or fibres, while others build with fine blades of grass, which they moisten with saliva in order to render them more pliable. Schomburghk tells us that this species is extraordinarily deficient in social attachment, and mentions an instance of this fact witnessed by himself. A large party of "Blackbirds" (Cassicans) had made their settlement upon the banks of a river which one day rose to an unusual height, and threatened destruction to the entire colony. Some of the nests were washed down, and others gradually filled with water. The terrified parents, unable to render any help to their young, flew about in an agonised confusion, or sought for their eggs and nestlings amongst the general débris, whilst such of the flock as were still above immediate danger sat quietly brooding, or continued their building operations without paying the slightest attention to the piteous cries of their companions. According to Audubon, these birds breed but once in the year, the nests being placed, as we have described, quite close together, thus ensuring a safety from the attacks of their numerous enemies, that could not otherwise be obtained; each family, however, leads a life quite distinct from that of its neighbours, and exhibits neither interest nor sympathy in the movements of those that live around it.

THE JAPU.

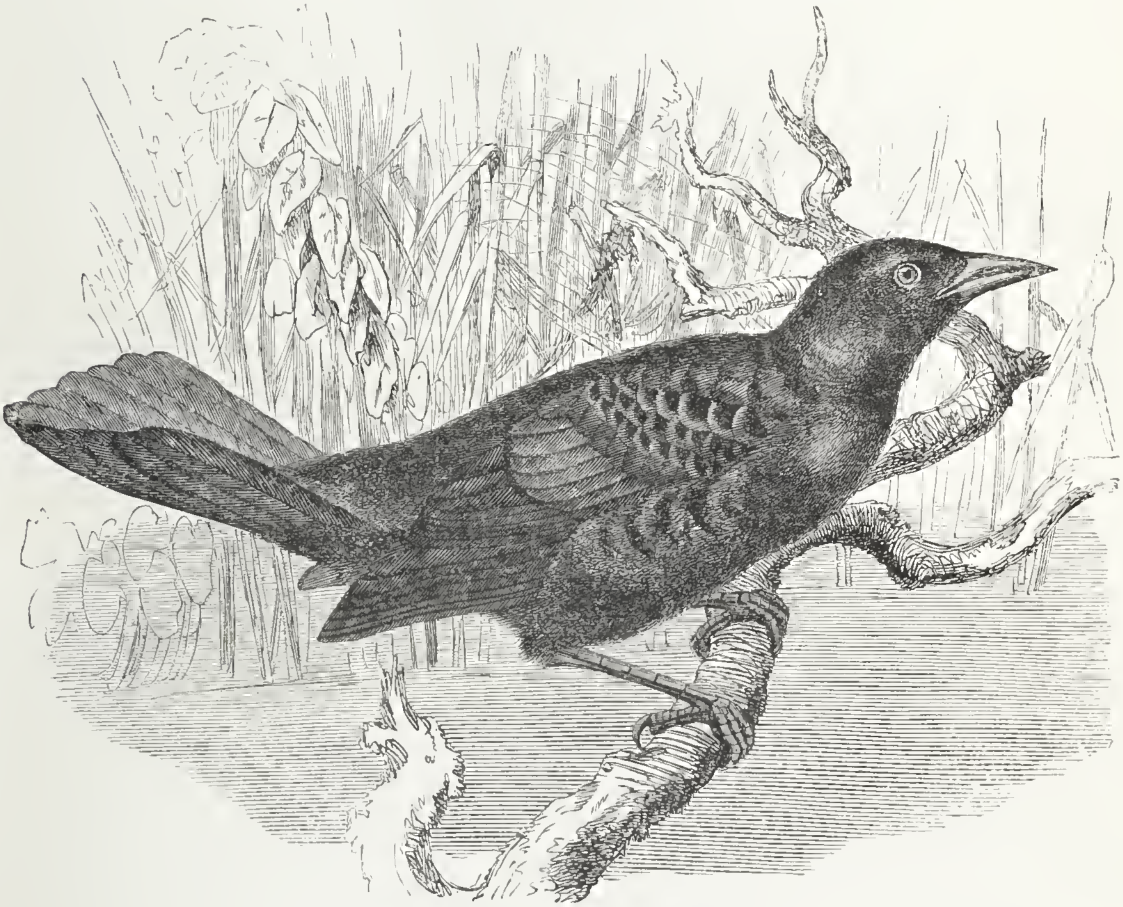
The Japu, or Tufted Cassican (*Cassicus cristatus*), is an inhabitant of South America, and has been selected for particular description as being one of the most remarkable species belonging to this group. In this bird the plumage is principally of a brilliant black, with the lower portion of the body of a deep reddish brown; the exterior tail-feathers are yellow, and the inner ones black. The beak is of a whitish yellow, the feet deep black, the eyes, like those of the rest of its congeners, light blue. The length of the male varies from fifteen and a half to seventeen inches, its breadth is twenty-three and a half inches, the wing measures from seven and two-third to eight inches, and the tail from six to seven inches. The female is at least three inches shorter, and the wings six or seven inches less in their span.

We are indebted to the Prince von Wied for an exhaustive account of this species, from which we shall extract such particulars as our space will permit. This remarkable bird, he tells us, inhabits the whole of South America, but is most numerous in the northern portions, frequenting woodland



THE BALTIMORE BIRD.

districts, and such plantations or human habitations as may be in the immediate neighbourhood of forests, but avoiding barren or open parts of the country. It is social and active, flying about incessantly amongst the trees, and hanging suspended by its sharp claws from the branches, from time to time plucking a favourite fruit, and carrying it off with cries of delight to another spot where it may be eaten in safety. During the season, oranges and bananas constitute its favourite food, and large quantities of valuable fruit are thus destroyed, in spite of all the precautions taken by the planters for its preservation; but at other times the Japu contents itself with less dainty fare, and subsists principally upon insects and berries. Few scenes are more animated than that afforded by a settlement of these interesting birds, as they perch upon the branches of the forest trees, in parties of some thirty or forty couples, or fly about filling the whole air with their strange and varied song, the general effect of which, when thus heard in chorus, is far from unpleasing, though some notes are harsh, and others very shrill.



THE GREAT BOAT-TAIL (*Quiscalus major*).

Their nests, which are extremely curious, are suspended close together from the branches of the highest trees; in shape they are not unlike a purse, being long, narrow, and rounded at the bottom, usually three or four feet long, and not more than five or six inches wide. A bough of about the thickness of a man's finger is usually chosen for their support, and to this they are stoutly fastened, a long and narrow hole being left at the top for an entrance. Occasionally these abodes are built one upon another, each being provided with a separate opening. The Japu constructs this large and beautiful fabric with the greatest care, weaving together the various fibres of which it is formed so strongly, and with so much skill, as to render the task of tearing it to pieces a work of real difficulty. When the nest is completed a soft, warm bed of moss or leaves is made at the bottom of the bag, and upon this the eggs, one or two in number, are laid. We ourselves have never found more than one young bird in the nest, but believe we are correct in stating that two eggs are sometimes deposited: they are slightly elongated in shape, the shell being white, with reddish-violet or deep purple streaks and spots. The nestlings have loud, harsh voices, and resemble their parents in plumage very shortly after being fledged, as the yellow tail is soon acquired. Immediately after the breeding season young and old congregate in flocks, and seek for food upon their favourite fruit-trees. A more strange or beautiful sight can scarcely be imagined, says the Prince von Wied, than that of a tree laden with dozens of the curious nests, and animated by the presence of a party of Cassicans, whose glorious plumage seems to gain new beauty as they spread their tails, raise their wings, after the manner of the swan, inflate their breasts, and utter their flute-like cry, as though to attract the observation of a stranger, whose near approach they will permit without exhibiting any sign of fear. The flight of this bird is swift and light, the peculiar motion of its wings producing a whirring sound, which is distinctly audible. The natives of South America shoot the Japu for the sake of its flesh, although somewhat tough and coarse, and for its feathers, which they apply to many purposes of ornamentation, frequently forming them into a plume to wear upon the forehead.

The BOAT-TAILS (*Quiscalus*), so called on account of the peculiar conformation of the caudal part of their plumage, are distinguished by their long, straight, conical beaks, the upper mandible of which is slightly curved and bent at its extremity. The wings are of moderate size, the tail much rounded, and the webs of its outer feathers turned upwards, something like the sides of a boat. The legs are delicately formed, and their coat, which is black, gleams in certain lights with metallic brilliancy.

THE GREAT BOAT-TAIL.

The GREAT BOAT-TAIL (*Quiscalus major*) is sixteen inches long, and twenty-four broad. Its entire plumage is black, but the head and neck are shaded with rich purple, and the wings and tail-feathers have a bright green shimmer. The female bird is considerably smaller than the male, rarely exceeding thirteen inches in length and eighteen in breadth; her colour is a dull, deep, greyish brown upon the upper part of the body, and reddish brown underneath. In both sexes the eye is pale yellow, and the beak and feet black.

This species inhabits the Southern States of North America, and is very numerous in marshy districts, or upon the banks of rivers; it likewise frequents the salt marshes, and may be seen on the sea coasts in large flocks during the entire year, searching in the mud for crabs and worms, upon which it principally subsists. It does not appear to feed upon insects, but is very destructive to fruit gardens, and fields of corn or rice. By the month of February the male has acquired his full beauty, and at once seeks a mate, retiring with her into the woods, where he exhibits his new plumage in every point of view, apparently to excite her admiration, its extreme brilliancy causing it to be seen glistening and shining even at some distance, as the bird expands its feathers in the full blaze of the sun. During the time employed in the selection of a companion all the quarrelsome feelings of which rivals are capable seem to be aroused, but that important business once settled, the flock subside into their usual peaceful state, and set about the construction of their nests in perfect harmony, usually preferring some marshy locality. The eggs are four or five in number, of a greyish white colour, variegated with brown and black spots. Both parents assist in rearing the young, who are supplied with all kinds of food, the nests of other species being frequently robbed in order to provide for the wants of the nestlings. The Boat-tails, in their turn, suffer considerably from the attacks of their many enemies, of whom the alligator may be considered as one of the most formidable, for being well aware what dainty morsels these fat and tender birds afford, it is ever on the watch to shake them from their nest among the reeds into the water, or by gliding quietly along in the direction from which it hears the young ones cry, secures at least a part of the brood, before the mother can warn her family of their danger. Like its congeners, the Boat-tail is extremely active; it climbs among the reeds with great rapidity, combining the boldness of the Crow with the agility of the Starling; its flight is undulating, and its song not unpleasing, though without great pretensions to melody. During autumn and winter it associates with many other birds, amongst which Herons are frequently met with.

The STARLINGS PROPER (*Sturni*) are birds of moderate size, compactly built, with short tails, long wings, rather long and broadly conical straight beaks, and high, strong feet; their plumage is rich, but harsh and very varied in its colouring. Like the rest of the family, they are of social habits, living together in flocks throughout the whole year, and carrying on all the business of life in common. Despite their somewhat clumsy appearance, they are extremely active, both upon the ground and in the air; their step is quick, but rather waddling; their flight light and noisy; and their movements in the trees extremely agile. All the members of the group are lively, restless, busy creatures, which may literally be said never to rest, except during the time they pass in sleep. Their food consists of insects, worms, and snails; occasionally they will eat fruit or the delicate parts of some plants, but never in such quantities as to be troublesome. The nest, which is large and irregular in its construction, is generally placed in holes of trees, rocks, or walls; the eggs are usually from four to seven in number. Few birds are more eminently adapted for domestication, their many talents rendering Starlings universal favourites when caged.

THE COMMON STARLING.

The COMMON STARLING (*Sturnus vulgaris*) combines all the many peculiarities of its family, and we have therefore selected it as the most suitable representative of their principal characteristics. The plumage of this bird varies considerably with age or the season of the year; in the spring the adult male is black, shaded with purple and green, these tints seeming lighter upon the wings and tail on account of the broad grey border by which the feathers are surrounded; some of those upon the back have greyish-yellow spots at their tips. The eyes are brown, the beak black, and the feet reddish brown. No sooner has the process of moulting been fully accomplished than the appearance of the bird is entirely changed, for all the feathers upon the nape, back, and breast are then tipped with white, and thus give the plumage the effect of being spotted; the beak also becomes considerably darker. The female resembles the male, but her plumage is even more spotted than that of her mate during the spring months of the year. The young are of a dark brownish grey, the region of the face being lighter than the rest of the body; the beak is greyish black, and the feet brownish grey. The length of this species is from eight and a half to eight and three-quarter inches, its breadth fourteen to fifteen inches; the wing measures rather more than four, and the tail from two and a half to two and three-quarter inches.

The COMMON STARLING is met with throughout almost the whole of Europe, principally frequenting its more southern portions, and preferring such wooded pastures or plains as are well watered or marshy. During its migrations it very frequently visits Northern Africa, and is an annual winter guest in Egypt and Algiers, but for the most part the flocks do not leave the Continent of Europe, and pass the colder part of the year in flying about the country in company with Ravens, Thrushes, and other similar birds. Few of the feathered tribe are endowed with so joyous and contented a disposition as is the Starling, whose cheerful voice may be heard amidst the utmost inclemencies of the weather, as it perches fully exposed to all the attacks of wind or rain, and appears philosophically indifferent to the scantiness of its supply of food. No sooner has spring commenced than the males may be seen about towns or villages, perching upon the steeples or high trees and pouring out their song, which is accompanied by a variety of animated gesticulations. We are, however, perhaps, giving our readers a wrong impression by speaking of the sounds uttered by the Starling as being a *song*, for it is, in fact, little more than a succession of harsh, loud, distinct sounds, uttered by the energetic vocalist with so much gaiety and expression as to render the performance quite attractive, especially when combined, as it occasionally is, with imitations of the songs of many other birds. Even such noises as the creaking of a door, the clattering of a windmill, or the crowing of a cock may often be clearly distinguished amongst its attempts at mimicry ; the little singer will frequently continue its vocal exercise

THE COMMON STARLING (*Sturnus vulgaris*).

for many hours at a time, only pausing occasionally in order to go in search of food. The breeding season commences early in spring, when Starlings build their nests, usually in the hollows of trees, or, should these not be attainable, in holes of walls or old buildings, and many are the disputes and combats that take place among the members of a flock before all are suited with a home. The nest itself is formed of stalks of grass, thickly lined with a bed of soft feathers, collected from the neighbouring farmyards; but, should such warm materials not be procurable, the architect is equally contented to employ hay, straw, or even small twigs. The brood consists of five or six long, large eggs, having a somewhat rough but glossy shell, of a light blue colour; upon these the female alone sits, but both parents assist in obtaining the constant supply of food required by the nestlings, though the father of the family manages now and then to steal away from his duties and pass an hour in singing with a party of pleasure-seeking companions. No sooner have the young left the nest than the vocal performances to which we have alluded may be heard throughout the entire day, for they do not require attention from their parents except during the first week; after leaving their home they immediately associate themselves with others of their kindred, and fly about in companies that are often very numerous, being in time strengthened by the addition of the second families, to the rearing of which the parents almost immediately turn their attention. When the duties of incubation are terminated, the old birds at once leave their nests, and congregate in immense flocks, which pass the night either amongst the trees or in beds of reeds or osiers. These swarms, occasionally containing hundreds or rather thousands of Starlings, fly about in dense masses during the day, and retire at night to the same roosting-place, their numbers frequently occasioning the reeds upon which they settle to break beneath their great weight, thus obliging them to seek shelter elsewhere, a proceeding always accompanied by an amount of squabbling and screaming that is absolutely deafening. Before leaving the country, the parent birds revisit their nests, upon which they perch and sing every morning and evening. They only commence their migrations when compelled to seek shelter from the snow and frost, and lead as blithe and active a life in the countries to which they resort as they do in their summer haunts.

Few species are so deserving of the protection of man as these most useful birds, an account of whose services in clearing the ground from snails and other hurtful creatures would sound almost incredible, were we to compute the hosts of active destroyers from whose attacks our fields and gardens are thus preserved. With characteristic patience, a German naturalist has been at the trouble of ascertaining that a single young Starling will consume 140 snails in fourteen hours out of the twenty-four, during which the young nestlings are constantly fed, only about three minutes intervening between the arrivals of the parents with fresh supplies for the hungry beaks of the little family. We cannot follow the writer through all his intricate calculations concerning a large swarm of Starlings that visited the part of Thuringia in which he lived, and must content ourselves by giving our readers the extraordinary result—namely, that the 180,000 birds of which this unusually large flock was composed could not have cleared the ground of less than 12,600,000 snails and worms *daily* during the time they remained in that neighbourhood. The proceedings of the Starling when in search of food are extremely amusing, as it runs hither and thither, prying into every conceivable nook with keen eyes and ready beak, so as to render it impossible for its victims to escape detection; even when search by sight is impracticable, the tongue is employed to feel amongst the grass, and accomplishes its duty with most unerring precision. When exposed to the attacks of their foes, the cunning of these birds is of the utmost service in securing their safety. It will frequently happen that when flying about in company with Crows and Jackdaws, the enjoyment of the party is interrupted by the sudden appearance of a Falcon or Sparrow-hawk; no sooner does the enemy approach than the vigilant Starlings at once take the alarm and beat a hasty and quiet retreat, leaving the bird of prey to seek a victim among their less intelligent or observant companions. From man they have little to fear, for by him their numerous services are too fully appreciated to allow of any great number being doomed to a life of confinement. Still, when caged their qualifications are such as to render them general favourites. When kept alone they are readily tamed, but, on the contrary, should they be placed with other birds, they soon become quarrelsome: and, not content with constantly squabbling with their companions, have often been known to tear the nests of the latter to pieces, and throw out not merely the eggs but the young. In our own aviary we on one occasion found a very lively Starling flying about with a piece of white paper in its beak, and chasing the terrified occupants in all directions, this sportive performance apparently affording the greatest delight to the perpetrator of the joke, who seemed to enjoy the alarm and screams thus excited. Most extraordinary are the tales told of the facility with which this species can be taught to speak or imitate almost any sound; an instance is recorded of a Starling having learnt to repeat the Lord's Prayer quite distinctly, without missing a word; the naturalist Lenz, to whose curious calculations respecting these birds we have already alluded, kept one of them tame, and tells us that this creature not only whistled two tunes, and could utter syllables, but that it understood and obeyed his words and gestures like a dog.

The following narrative, for which we are indebted to the kindness of Dr. McFarlane McBirnie, will be read with interest:—"My father," writes Dr. Birnie, "from boyhood was passionately fond of birds, when under ten years of age he travelled from Balpon to Linlithgow and back, a distance of forty miles, in order to get a canary. A few years after, having broken his leg, he was confined to the recumbent position for two months, the tedium of which was relieved by the company of his favourites. In 1845 he bought a fledgling Starling for eighteen-pence, and at once commenced its education. He spent three hours a day (not, of course, consecutively) for twelve months before he brought it to perfection. From the very first, poor 'Richard,' as it was called, showed a love of learning, he seemed actually to drink it in; he would lie with his head inclined, as a person does when he wishes to listen intently, and would lean against the wires of his cage to be as near as possible to the sound; and I would here remark that in training a bird to sing and speak, the instruction should be imparted in a subdued, semi-whispering tone, in a darkened chamber, where there is nothing to distract the attention. My father made it a point to give Richard half an hour's tuition every night after ten o'clock, in total darkness, and he says he found it more tractable then than at any other time. It would take up too much space to show the *rationale* of this; I may state, however, that in early morning birds are intent on procuring food, and cannot be expected to listen to instruction, and then, during the day there are so many things going on in a house, so many diverse sounds, that it is impossible for them to single out the vocables we wish, whereas, after three hours' repose, when there is no desire for food, no wish for the pleasure of muscular motion, no sounds or sights to withdraw their attention, then is the fitting time to teach. By the time Richard was able to hop from perch to perch, his master saw that his pupil was striving to imitate him; never was scholar more apt or more gratified at receiving a prize than Richard was at getting a bit of hard-boiled egg on achieving two or three additional notes, and in this way he soon became the Mario of Starlings. At the word of command—as at the down-beat of a conductor's baton—Richard started off with the 'Hills of Glenorchy.' I regretted my father had not selected a more popular tune; yet I question if one could have been got more adapted for the vocalisation of a bird: prolonged notes, such as minims or dotted crotchets, a bird is not able to maintain; a tune with quavers, and in marching time, is best adapted to their sustaining powers. After having whistled the 'Hills of Glenorchy,' Richard paused, as it were to draw breath, and said, 'That's the "Hills of Glenorchy"—that's a tune for the ladies;' 'A wee gill o' the best, here—quick, quick, make haste;' 'Richard's a pretty, pretty bird;' 'A coach and six for pretty Richard;' 'Richard's the boy for kissing the lasses;' here he imitated the sound of kissing, familiar to every one, which convulsed his audience with laughter, especially if a number of ladies were present; then added, ' Now for the "Hills of Glenorchy," ' and began *de novo.* I have heard many birds articulate, and am sure I shall be corroborated in the statement that, more particularly in the Parrot tribe, the words are often a mere screech—harsh and dissonant to a musical ear, and in many cases a stranger would require to be informed beforehand what the bird was going to say, ere he could properly understand it; with Richard it was quite the reverse; his whole performance was thoroughly musical, and so accurate was his vocalisation, that when at his best the tuning-fork showed that his notes had not fallen to any appreciable extent at the end of his song. Hundreds of times have I seen him roused from sleep at midnight, to gratify parties who had come from a distance to hear him; my father would bend over the cage, and say in a petting sort of way, ' Come, now, Richard, give us the "Hills of Glenorchy," ' when the poor bird would hop over to the wires, place his bill in my father's mouth, get a kiss, and then go through the whole performance as often as he was asked. Richard had, besides his *chef-d'œuvre*, many stray sentences, which of themselves would have rendered him famous, such as calling the dog, ordering coals, &c.; but these my father discouraged. Richard died at the patriarchal age of sixteen, deeply regretted by those who had, for so many years, looked upon and spoken to him as one of the family. While I write, he is looking down on me from his glass shrine."

THE SARDINIAN STARLING.

The Sardinian Starling (*Sturnus unicolor*) is a species inhabiting Southern Europe, and distinguished from the bird last described by the long and slender feathers upon its head and nape, and by the colour of its plumage, the latter being of pale slate colour, almost entirely without spot, and only enlivened by a very slight metallic lustre. The coat of the young bird is dark brown. This species inhabits Spain, Southern Italy, and a large portion of Asia; it is common in Cashmere, Scinde, and the Punjaub; its size is somewhat larger than that of our Common Starling, which it closely resembles in its habits.

THE ROSE STARLING.

The Rose Starling, or Shepherd-bird (*Pastor roseus*), is another European species, nearly related to those last described, but having the beak somewhat more compressed at its sides, and the upper mandible slightly curved; the wings are also larger, and the tarsi higher than in the common Starling. In the old male the feathers upon the head become elongated, and thus form a kind of tuft. The Rose Starling is from eight and a quarter to eight and three-quarter inches long, and from sixteen to eighteen and a half broad; the wings measure three inches and a quarter. The plumage of the old male is a rich black upon the head, throat, and upper breast, these parts being enlivened by a beautiful purple gloss, also visible upon the wings and tail, which are brownish black; the rest of the body is of a delicate rose colour. The plumage of the female is paler in its tints and her tuft smaller than that of her mate. The young wear the same garb as other young Starlings.

South-Eastern Europe and a great part of Central Asia afford a home to this beautiful species, which only occasionally visits other portions of our Continent, but migrates regularly to countries still further south. In its mode of life it very much resembles the Common Starling, with which it frequently associates, the various flocks at times sleeping in company upon beds of reeds, though the Rose Starling usually prefers to seek the shelter of the woods during the night. The movements of these birds when upon the ground are easier than those of their congeners; but their voice is strange and unpleasing—indeed, the song of a party of them has been well described as resembling the noises made by a number of rats when the latter are fighting and disputing amongst themselves; moreover, so peculiar is their manner of singing when any number are together, that a listener would imagine them to be engaged in shrill and noisy altercation. In some parts of the country they are known as the

Grasshopper Starlings, on account of the large numbers of those insects destroyed by their agency; their appearance is consequently often regarded as an unfailing sign that the much-dreaded swarms of locusts are about to infest the land; others do great service by clearing the backs of cattle from many tormenting parasites. In India, however, the Rose Starlings are by no means regarded with favour, as the damage they do to the fields of rice is frequently extremely serious, and when this means of support is no longer obtainable, other kinds of seeds and grain are resorted to and destroyed in large quantities. Both the nest and eggs resemble those of other Starlings. The disposition of the Shepherd-bird is gentle and pleasing, but it is entirely without the amusing qualities by which the members of this family are usually characterised.

THE ROSE STARLING (*Pastor roseus*).

The MINA BIRDS (*Acridotheres*) form a distinct group of Starlings, inhabiting the continent of India. In these birds the beak is short, strong, and slightly curved at its roof; the feet are powerful, the toes long, the tail rounded at its extremity, and the head ornamented with a crest.

THE MINA BIRD.

The MINA BIRD (*Acridotheres tristis*) is about ten inches long, three and a half of which belong to the tail; the wing measures five inches and a quarter. The feathers upon the head, nape, and breast are of a brilliant black; the rest of the coat is reddish brown, the wings and back being of a deeper shade, and the under side lighter than the rest of the body; the exterior quills are black, but white at the root, thus giving a somewhat spotted appearance to the wing; the tail is black, and tipped with patches of white, the latter becoming gradually wider towards the sides; the belly and lower wing-covers are also white.

The Minas are among the commonest birds in India, Assam, and Burmah, where they frequent the neighbourhood of towns and villages in preference to more wooded districts. A tree is usually selected as their sleeping-place, and from this point they fly over the country in small parties in search of food, stealing occasionally even into the huts of the natives, in order to obtain cooked rice, of which they are very fond; some follow the flocks and herds, and seize the grasshoppers as they rise from the grass when disturbed by the cattle, others seek subsistence by plundering the gardens and orchards in their vicinity. When upon the ground the Mina walks with ease, constantly bowing its head as it goes, and occasionally springing to a considerable distance; its flight is heavy, direct, and tolerably rapid, and its notes rich and varied. So little fear is exhibited by these birds that they build almost exclusively in the vicinity of houses, or even in temporary cages that are hung out for their accommodation. In Mosuri, where this species is only a summer visitor, it usually prefers making its nest within a hollow tree. Like the Starling, it easily acquires the art of speaking, and of imitating a variety of sounds. The Mina has been dedicated by the Indians to their god Ram, and is usually represented as perched upon his hand. Major Norgate has given a full description of this interesting bird, from which our space will only allow us to extract the following account of its quarrelsome propensities—regular pitched battles, he tells us, are of constant occurrence amongst these pugnacious little creatures; the two combatants, who usually belong to different flocks, coming to the ground, in order the better to carry on their struggle, which is maintained by clawing, beating with the wings, and rolling round each other, screaming loudly as the combat waxes hot; only for a very brief space, however, is the fight confined to these two champions of the rival parties; one after another the rest come down and mingle in the fray, which often rages so fiercely that broken

THE MUSICAL GRAKLE (*Gracula musica*).

wings or other injuries at last compel the untiring combatants to cease their strife. The same writer describes the Mina's manner of singing as being very amusing: it inflates its chest as though about to make a most tremendous effort, and then gives voice to such a variety of crowing, grunting, and squeaking sounds as cannot fail to astonish its hearer. When in flight the notes of these birds are by no means unpleasing; but if alarmed their cry rises to a loud, hoarse shriek, the rest of the party usually joining chorus until the uproar becomes general. The nest is constructed with the utmost carelessness, and is, in fact, a mere heap of straw, twigs, rags, or even shreds of paper; but in spite of the discomfort of the home thus provided for the young, the latter are tended by both parents with great affection.

The GRAKLES (*Graculæ*) constitute a race of Starlings that have always been regarded with great favour by mankind. These birds are of a moderate size, with thick bodies, and short wings and tails; the beak, which equals the head in length, is thick, high, and in its transverse section of a square form, the upper mandible is rounded and much vaulted at its roof. The fourth quill of the wings is longer than the rest, and the tail, which is rounded at its tip, is composed of twelve feathers; the feet are strong, and the head is furnished on each side with two moveable appendages resembling flaps of skin (which are usually brightly coloured) hanging down from behind the eyes. The plumage is soft, and of a satin-like brilliancy.

THE MUSICAL GRAKLE.

The **Musical Grakle** (*Gracula musica*, or *Gracula religiosa*) is about ten inches long and eighteen and a half inches in breadth; the tail measures nearly three inches, and the wing five inches and three-fifths. The plumage of this species is of a uniform rich, deep, purplish black, shaded with green upon the lower part of the back and upper wing-covers; upon the under surface of the body this beautiful green shimmer is less distinctly visible; the wings and tail are jet black, the former edged with a white band, formed by a series of patches, with which the first seven primary quills are marked; the strange fleshy flaps to which we have alluded are of a bright yellow colour, and are appended behind the eyes, passing over the ears, at which part they become considerably dilated. A naked space under the eyes is also of a brilliant yellow. The beak is orange, the feet yellow, and the eyes dark brown.

Jerdon tells us that these birds principally inhabit the woods of Eastern India, and that they are found in considerable numbers in the Rhat Mountains and other elevated regions, living at an altitude of 3,000 feet above the level of the sea, and only making their appearance in large flocks during the winter; at other seasons of the year they are usually met with in parties of six or seven. These assemblages pass the night together, generally in beds of reeds or bamboo thickets upon the banks of the mountain streamlets. Their food consists of various kinds of fruit and berries, and their visits are therefore greatly dreaded by the proprietors of fields and gardens. The Grakle is lively and active, much resembling the Common Starling in disposition: its song is cheerful and varied, but contains many unpleasing notes; its powers of imitation are so highly developed as to render it a most interesting companion when tamed; indeed, some of the admirers of this gifted bird declare it to be superior to the Parrot in the art of mimicry, and at the same time entirely without the disagreeable noisy habits that often render the latter intolerable. When caged, the Grakle not only becomes much attached to those who feed it, but soon familiarises itself with all the dogs and cats of the establishment, and will even fly fearlessly about the house in search of food. Our own experience does not allow us to speak in quite such unqualified terms of praise as the writer from whom we quote: we have seen an instance in which one of these birds was so voracious as scarcely to allow itself time to utter a sound, and so pugnacious and quarrelsome as to be an object of dread to all its feathered companions, who suffered severely from its beak and claws. This species breeds in holes of trees, but its eggs have not as yet been identified.

The OX-BITERS (*Buphagæ*) are very remarkable birds, differing from other Starlings in the construction of their beak and feet, but resembling them in their mode of life and general habits. Their bodies are slender and their wings long; the tail, which is composed of twelve feathers, is of moderate size; the feet are provided with short toes, armed with strong hooked claws; the very peculiar beak is round at its base, and towards its tip compressed at the sides; the upper mandible is vaulted, and the lower portion bent forward at an obtuse angle; the plumage is lax, and of a brownish-grey colour. We are only acquainted with two species: they inhabit Central and Southern Africa, and bear a strong family likeness to each other both in their appearance and demeanour.

THE AFRICAN OX-BITER.

The African Ox-biter (*Buphaga Africanus*) is about nine inches long and thirteen and three-quarters broad, the tail measures three and a half inches. The whole of the upper part of the body, including the throat and a portion of the breast, are of a uniform reddish brown, the belly and rump being of a light reddish yellow; the wings and tail are deep brown, the beak is of a reddish tint at its extremity and yellow towards its base; the feet are brownish grey, and the eyes bright reddish brown.

THE RED-BEAKED OX-BITER.

The Red-beaked Ox-biter (*Buphaga erythrorhyncha*) is about the same size as the species last described. Upon the back this bird is of a greyish brown, the lower parts of the body are pale yellow; the beak is light red, the feet greyish brown, and the eyes and eyelids of a golden colour. Both the species alluded to above are found spread over a large extent of country—the former inhabiting South Africa, whilst the home of the latter is confined to the central regions of that continent; occasionally both are found inhabiting the same district, but under no circumstances do the two species—though their mode of life has so much in common—ever join company. They are usually seen flying in little flocks of from six to eight, following herds of cattle, camels, elephants, or rhinoceroses about the country, the whole party frequently settling upon the backs of these animals in search of the flies or bots by which they are much infested. These birds are much disliked by the natives, owing to an idea very prevalent in Abyssinia, that the Ox-biter prevents the sores upon the cattle from healing; but this is far from being the case, as the beasts themselves seem to be fully aware, for they will stand with the greatest patience and allow the birds to extract the maggots from their skin or clear away the flies that have been attracted to any wounded part, never so much as attempting to frighten away their little friends, whose sharp probing beaks are rendering them efficient relief at the expense of a few moments of pain. Only such beasts as are unacquainted with the happy results attendant on this operation ever resent it, but these will occasionally testify excitement almost approaching to frenzy when they find themselves taken possession of by such unbidden guests. Ehrenberg tells us that the manner in which the Ox-biters carry on their work is most amusing, and describes their movements over the bodies of the huge beasts they favour as resembling those of the Woodpecker when climbing about the trunk and branches of a tree; no portion of the animal escapes scrutiny, and in prosecuting their search they will even hang head downwards from the ears or limbs, in order more perfectly to carry out their minute investigations. It is a strange sight to see the perfect confidence with which both quadrupeds and birds seem to regard each other, though the latter are so afraid of man that on the first sight of a stranger they scramble together upon the very top of the back of the ox or camel whose skin they are examining, and, should the traveller attempt to approach nearer, seek safety in flight, rising into the air with wings full spread, and, after describing a large circle, descend to resume their labours;—should danger still impend, they take refuge upon some high stone or piece of rock; but they never frequent trees for this purpose. Gordon Cumming tells us that the cattle are often warned of the approach of some of their numerous enemies by the acute perceptions of these watchful servants; but neither he nor any other traveller has given us any information as to the manner in which the Ox-biters build their nests, or carry on the work of incubation.

THE RED-BEAKED OX-BITER (*Buphaga erythrorhyncha.*)

The tropical regions of Africa, and some part of Asia, are inhabited by a group of birds which seem to form a connecting link between the Starlings and the Birds of Paradise, and are distinguished by such splendour of colour and satin-like brilliancy of plumage, as to have obtained the name of

The GLOSSY STARLINGS (*Lamprotornithes*). All parts of the countries to which they belong are enlivened by the presence of these brilliant creatures, but they principally take up their residence in rocky districts, wooded valleys, or even in the immediate vicinity of man, though they prefer to disport themselves amidst the woods, to which they lend an embellishment that travellers are never weary of extolling. The various members of this group are without exception lively, bold, and noisy in their demeanour; they are usually met with in large flocks, and in many cases do not withdraw from the society of their companions, even during the breeding season; this sociable disposition is, however, by no means manifested towards other birds, with many of whom they live in a constant state of active warfare. Fruit, seeds, snails, worms, and insects of various kinds constitute their principal food, but they will occasionally eat carrion, and, like the Ox-biter, they often render good service to the cattle by clearing them from various parasites. Their movements are light and active, in all respects resembling those of other Starlings, and their disposition exceedingly sagacious and intelligent. Some species have very discordant voices, while others are not without some slight pretensions to song, inasmuch as their call-note is agreeable, and often composed of more than one syllable. Such trifling peculiarities as distinguish the various members of the group are most strikingly observable in the difference of their habits during the breeding season: some species separating from the rest of the flock while busied with the cares of a family; others, on the contrary, remaining with their companions even at that period of the year. The formation of their nests varies considerably, according to the situations in which they are placed—such as are built among the rocks being nothing better than a mere heap of twigs or grass, whilst those placed in the trees are necessarily substantial, and more artistic in their construction. The brood usually consists of five or six eggs, of a green colour, and marked with either red, brown, bluish, or black spots; some species breed twice within the year. It is at present doubtful whether any of these birds ever migrate; for the most part they seem to spend their time in wandering over a limited tract of country, appearing in certain parts only for a short time, and then as suddenly taking their departure. The Glossy Starlings are seldom caught by the natives of the regions they frequent, and are, therefore, very rarely seen in our part of the world, though their great beauty, and the ease with which they may be reared, eminently point them out as adapted for life in a cage.

THE SUPERB GLOSSY STARLING (*Notauges superbus*).

We have divided this group into several divisions, the first of which contains

The TRUE GLOSSY STARLINGS (*Lamprocolii*). In their general conformation these birds resemble our Common Starling; the beak, which is of moderate size, slightly curves towards its tip, and the upper mandible reaches a little beyond the lower. The wings extend about half way down the rather short tail, which is straight at its extremity. The feet are short and powerful, the toes large, and the claws with which they are furnished of moderate proportions. All the members of this group are decked in the most gorgeous apparel, of which a metallic green is usually the predominating tint, and all have a more or less satin-like gloss upon their plumage.

THE BRONZE-COLOURED GLOSSY STARLING.

The Bronze-coloured Glossy Starling (*Lamprocolius chalybeus*), an inhabitant of North-Eastern Africa, possesses an attire of such extraordinary lustre, that words are almost inadequate to express the appearance it presents when glittering in the rays of a tropical sun. The plumage is bronze-like in tint, except upon the sides of the head, the lower part of the belly, and wings, these parts being blue, as are the tips of the feathers upon the shoulders; the dresses of the male and female are alike, but the young are of a metallic green upon the back, and underneath of a deep brownish grey, almost entirely devoid of brilliancy. This species is about ten and a quarter inches long and seventeen and a half in breadth; the wing measures five and a half, and the tail three and three-quarter inches. The Bronzed Glossy Starlings are to be met with in great numbers in their native land, more especially in the forests, which they seem to prefer to the less densely wooded districts; they also occasionally frequent the more open country, living for the most part in pairs, and only congregating in small flocks after the termination of the breeding season. They are brisk and lively, endowed with all a Starling's alacrity, both upon the ground and in the trees; their flight alone is peculiar, being distinguished by a noiselessness that plainly indicates the velvety softness of their wings. Little can be said as to their other endowments—their song is extremely insignificant, and their call-note a most unpleasing sound. To say the truth, if these birds were not so splendidly decorated they would have little to recommend them to our notice, nature seems to have been so lavish in this one particular as to have deemed any other charm unnecessary. Those who have seen the Bronze Starling in its native woods describe it as flashing upon their astonished sight like a bright and unexpected gleam of sunshine, its feathers during life reflecting every ray of light as does a looking-glass; but they lose this intense brilliancy very shortly after death. This beautiful creature has, we believe, as yet never been brought to Europe.

THE GOLDEN-BREASTED GLOSSY STARLING.

The Golden-breasted Glossy Starling (*Notauges chrysogaster*), another species belonging to this group, is an inhabitant of North-Eastern Africa, and is distinguishable from its congeners by the greater thickness and inferior gloss of its plumage, as well as by its slender beak, short tail, comparatively strong high tarsi, and long toes. This bird is not more than eight inches long and thirteen and a half broad; the wing measures four inches, and the tail two inches and a half. In the old male the brow and upper part of the head are of a greyish green, the mantle, neck, throat, and breast blackish green, intermingled with bright brown; the rump is brilliant steel blue, the belly and thighs rust red, but entirely devoid of lustre. The bridles are black, the eyes brown, the beak yellow, and the feet blueish black. The young are dark brownish green upon the back, and reddish brown below the region of the throat, which is rather deeper in shade than the breast.

THE SUPERB GLOSSY STARLING.

The Superb Glossy Starling (*Notauges superbus*) may certainly be regarded as the most magnificent member of the group. This species, which inhabits Abyssinia and the most unfrequented portions of the African continent, is of about the same size as that last mentioned; its plumage is a reddish copper colour upon the top of the head, and green upon the mantle, each feather being tipped with a brilliant silky black spot; the front of the throat, upper part of the breast, and tail are blue, with a steel-like gloss. The rest of the body is red, with the exception of a white band upon the breast.

These birds are met with in considerable numbers throughout the whole of Soudan; they may usually be seen flying about in large flocks, sometimes, but rarely, in pairs. Heuglin tells us that though they prefer to reside upon low-lying plains, they are occasionally met with at an altitude of 4,000 feet above the sea, but we ourselves have never seen them at so great an elevation. During the day multitudes of these gorgeous creatures may be observed disporting themselves with great vivacity, running in small parties over the ground in search of food, or seeking repose and shelter from the mid-day sun amongst the branches of the trees, on which they also perch morning and evening, whilst the males pour forth their matin or vesper song; should the party be alarmed, they do not seek safety in flight, but hide amongst the foliage until they can again venture from their concealment. During the whole time they are in search of food the neighbourhood is kept in a constant state of uproar: one screams to another almost without intermission, several frequently joining in with their voices, apparently for the sole purpose of rendering confusion worse confounded. As may be imagined, it is no difficult matter to trace a flock of these birds, but their capture by means of the gun is attended with much difficulty, as they are extremely shy, and resort to shelter at the first alarm of danger.

The members of the second division of this group are recognisable by their delicate, arched, and compressed beaks, short wings, tails of moderate length, weak long-toed feet, and scale-like plumage, from which they have derived their name of SCALY GLOSSY STARLINGS (*Pholidauges*). We are only acquainted with one species—

THE SCALY GLOSSY STARLING.

The Scaly Glossy Starling (*Pholidauges leucogaster*) is met with over a large portion of Africa, and also occasionally found in Arabia. The plumage of this gaily-bedizened bird is of a rich violet over the whole of the back and throat as far as the breast, these parts being pervaded by a beautiful blue reflection or shimmer; the breast and belly are white, the wings blackish brown, bordered with violet, and relieved, as are all the darker portions of the body, by a copper-coloured metallic brilliancy; the iris is light brown, and the beak and feet black. The young differ widely in appearance from the adults, the upper portion of their bodies being striped with light and dark shades of brown, while the under parts are reddish white, streaked with brown. The male is about seven inches long, and twelve and a half broad; the wing measures four inches, and the tail two inches and three-quarters.

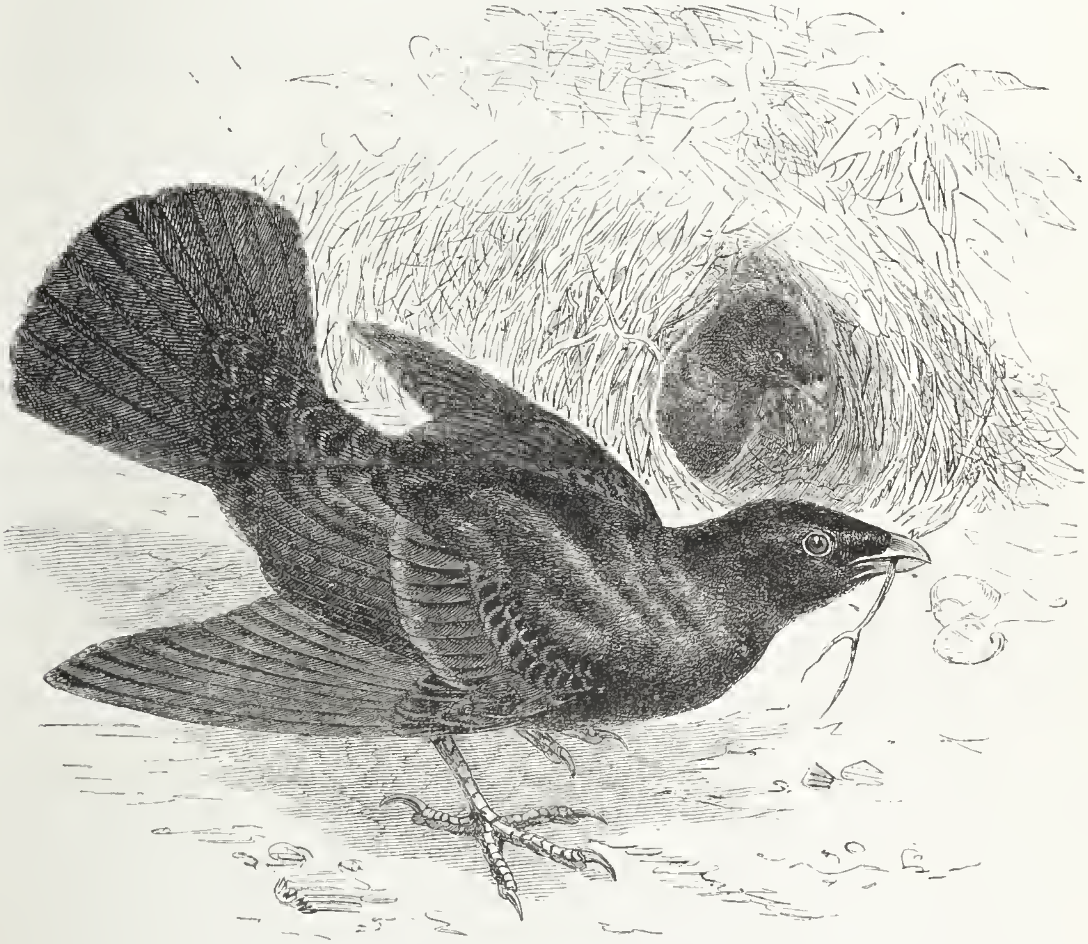
These birds are widely distributed throughout the countries where they reside, generally, however, preferring mountainous districts; they are eminently arboreal, and but rarely pass any length of time upon the ground. In their mode of life they resemble other Starlings, but are very quiet compared with the rest of their family. When in flight their plumage is extremely striking, for, instead of its usual violet hue, its back glitters in the sunlight with a bright *copper colour*, and it is only when it remains stationary that the blue shades become apparent, insomuch that those who are lucky enough to bring down one of them with the gun are astonished to find how they have been deceived as to the real colours. In its movements this brilliant bird is light and elegant, flying with great rapidity high in the air; when in search of a resting-place, it selects the tops of high trees, those in the immediate vicinity of water obtaining a decided preference. Heuglin tells us that he has seen these birds living 2,000 feet above the sea, but gives us no information as to their nests, or habits during the breeding season.

The GLOSSY MAGPIES (*Lamprotornithes*) constitute a small group belonging to the family of the Starlings. They somewhat resemble the Jay in their form and habits, and are of larger size than the species we have been describing. They are, moreover, remarkable for the great development of their tails; the beak is small and delicate; the upper mandible is arched, and curves slightly outwards at its edges; the wings are long, and the tail so sharply graduated, that the exterior feathers are only a third of the length of those in its centre; the tarsi are high, the toes long, and armed with strong claws.

THE SCALY GLOSSY STARLING (*Pholidauges leucogaster*).

THE BRAZEN GLOSSY MAGPIE.

The BRAZEN GLOSSY MAGPIE (*Lamprotornis äenea*) is from eighteen to twenty inches long, ten or thirteen inches of this measurement belonging to the tail; the wing is from six and a half to seven and a half inches long. The predominating shade upon the plumage is a beautiful ever-changing blueish green; the back and lower parts of the body are brown, and the head enlivened by the copper-like brilliancy we have already alluded to as pervading this group. The feathers upon the wing-covers are spotted with black at their tips; the tail is purplish blue, marked with irregular dark spots, and gleams with metallic lustre. The eye is light yellow, and the back and feet black. These splendid birds inhabit Western and Southern Africa, and are replaced by a very similar race in the more northern portions of the continent. Le Vaillant, whom we have to thank for the discovery of this species, tells us that the Brazen Glossy Magpies congregate in large flocks, and spend their lives principally amongst the trees, from which they descend from time to time to seek for food. When running upon the ground the long tail is borne aloft, after the manner of the Jay. In disposition these birds are extremely shy, and distrustful of man, though we have occasionally seen them near such of the native huts as are built upon the borders of the forest. Heuglin mentions having seen them living both in pairs and flocks, at an altitude of 4,000 feet above the level of the sea; we learn from the same author that they will occasionally eat carrion; their voice is harsh and screaming, and so peculiar in its sound as to be quite unmistakable. Their food consists of various kinds of insects, some of which they catch with great dexterity when on the wing.



THE SATIN BOWER BIRD (*Philonorhynchus holosericus.*)

The ROCK GLOSSY STARLINGS (*Moriones*) constitute the last group of this family to which we shall allude. These birds are recognisable by the inferior beauty of their plumage, which, however, is not without a certain brilliancy and gloss upon the feathers; in all the species the quills of the wings are almost or entirely brown.

THE WHITE-BEAKED ROCK GLOSSY STARLING.

The White-beaked Rock Glossy Starling (*Philonorhynchus albirostris*) is found in Abyssinia, where it frequents the rocky parts of the country, or lives upon high bare trees or ancient ruins. Its plumage is silky; the short beak, which is rounded at its tip, is slightly notched, and partly covered with hair-like feathers at the base of the upper mandible; the wings are rounded and moderate in size, the third quill being longer than the rest; the tail is rather long, and square at its extremity; the feet are powerful, the toes long, and armed with strong hooked claws. The plumage of the old male is principally of a blueish black, that shines with a steel-coloured lustre; the tail and large wing-covers are of a soft velvety black; their quills brownish red, tipped with a blackish shade upon the outer web. The iris is reddish brown, the beak greyish brown, and the feet black. The female and young are blueish grey upon the head, throat, and breast. The length of this bird is about eleven inches, the wing measures six and a quarter, and the tail four inches and one-third. Rüppell, who first discovered this species of Rock Starling, tells us that it lives in flocks, and subsists upon various kinds of berries and seeds; its movements are light and elegant, and its voice pleasing and rich in its tones. The capture of this bird is extremely difficult, as it is exceedingly shy, and ever on the alert against approaching danger, which it eludes by seeking shelter amongst the fastnesses of its favourite rocks.

The MOUNTAIN GLOSSY STARLINGS (*Amydrus*) are distinguished by their decidedly curved and delicate beaks, short rounded wings, long graduated tail, and silky plumage, which is entirely without the metallic brilliancy possessed by the birds above described; they inhabit Southern and Central Africa, and are occasionally met with in Arabia. As an example of this group we select

THE NABURUP.

The NABURUP (*Amydrus Naburup*), is a bird about nine inches and two-thirds long; the wing measures five and a quarter inches, and the tail four inches. The colour of the plumage is a dark steel blue, except upon the six first quills, these being reddish brown upon their outer web, light brown upon their inner portion, and blackish brown at their tips; the iris is light red, the beak and feet pale black. The coat of the female resembles that of the male, but she is somewhat smaller. The young are brown, spotted with steel blue. In its habits this species is social and its song agreeable; like its congeners, it builds amongst the rocks of Abyssinia, forming in some cases small settlements, and weaving its nest with so little skill as to permit the eye to penetrate its interior. Both sexes assist in the work of incubation, but beyond this we have no knowledge of their habits.

The ORIOLES (*Orioli*) constitute a family of beautiful birds, regarded by some ornithologists as allied to the Thrushes, and by others classed with the Birds of Paradise, but to which we venture to assign a position in this place. They are recognisable by their elongate slender bodies, long wings, and tails of moderate size; the feet are short, the toes strong, and armed with powerful claws; the beak is long and conical; both mandibles are rather vaulted, and the upper one terminates in a slight hook. The plumage, which is soft and gay in its colours, varies considerably, according to the age or sex of the bird; and, when destitute of the brilliant gloss by which it is usually distinguished, is still more varied in its hues. Several of the most interesting species of this family inhabit Australia, and none of its members are found beyond the limits of the eastern hemisphere. All may be regarded as tree-birds, though some few spend a considerable portion of their time upon the ground, over which they hop with an extremely heavy, awkward step; amongst the branches, on the contrary, their movements are light and graceful, and their voice is both full and pleasing in its tones. Fruit and insects constitute their principal food. During the period of incubation many species separate entirely from their companions, towards whom they testify considerable animosity and jealousy; but others remain in the company of their associates even at that season of the year. The nests of all are placed upon trees, and are remarkable for the neatness and beauty of their construction.

THE SATIN BOWER BIRD.

The SATIN BOWER BIRD (*Ptilonorhynchus holosericus*), a recently-discovered inhabitant of Australia, is a very celebrated member of this family. The body of this species is powerful, the wings rounded at the tip; the tail of moderate size, and cut straight at its extremity; the tarsi are high, slender, and the toes short. The beak is strongly formed, the upper mandible arched at the tip over the lower portion, which is also slightly bent. The adult male is truly a splendid creature, with rich satin-like plumage of a deep blue black; the primary quills and the secondaries are of velvety blackness, tipped with blue, as are also the wing and tail feathers; the iris light blue, surrounded by a narrow red ring; the beak is blueish grey, tipped with yellow, and the feet red. The female is green upon the upper parts of the body, and underneath of a yellowish green; the feathers are spotted here and there with brown crescent-shaped spots, that give a scale-like appearance to the lower portion of the bird; the wings and tail are deep yellowish brown. The young resemble the mother.

Gould has made us familiar with the curious habits of the Satin Birds, whose favourite haunts are found amidst the thickly-foliaged "bush" of Australia, and here they may be seen living in pairs throughout the greater part of the year, only quitting their favourite locality when tempted to short distances by the hope of obtaining some particular kind of food. In autumn they usually congregate in small flocks, and seek a home among the bushes that grow upon the banks of neighbouring rivers. Insects sometimes form a portion of their diet; they, however, prefer fruits and grain, and are fond of robbing the gigantic fig-trees of their tempting burden. When engaged in eating, these birds are so extremely shy and cautious as to render their capture almost impossible. One of the oldest members of the party is usually found perched upon the highest branch of some neighbouring tree for the purpose of warning his companions of approaching danger: this he does by a peculiar clear note, which —should the sentinel become excited—is followed by a harsh, guttural cry. Their *bowers* have been described by the author from whom we quote as most peculiar and beautiful in their construction. From observations made by himself, he tells us that these remarkable erections are generally placed upon the ground, under the shelter of an overhanging tree or bush, in some quiet and retired place, and vary considerably in their size. The walls are strongly formed of twigs and small branches woven together in such a manner as to bring the ends in contact at the top. An opening is left to form an entrance at both extremities of this strange arbour, which is decked with every gay or shining material that the little architects can procure; snail or mussel shells, pebbles, or white bones are laid as ornaments to grace the entrances, and Parrot-feathers or brightly-coloured rags are stuck between the twigs; indeed, so well do the natives know the passion of the Satin Bird for glittering or polished objects, that should they lose anything of that description, they at once endeavour to discover the bower that has been beautified at the expense of their property. Gould mentions having found a pretty pebble an inch and a half long lying within one of these edifices, which was also decked with a variety of blue woollen scraps that had, doubtless, been stolen from a settlement in the vicinity. Males and females alike resort to these bowers, solely, as it would appear, to disport themselves in very much the same manner as we do in a ball-room, dancing and turning about with the greatest spirit and liveliness, or chasing each other up and down their gay apartment in an untiring whirl of sportive delight. Should a female lose her mate, she at once consoles herself with another; and we have known an instance in which one of them was deprived of no less than three successive mates, without deterring her from participating in the gambols of the rest of the party. The males principally undertake the actual labours of constructing the gala chamber, whilst all the more delicate work of beautifying the interior devolves entirely upon the females; the nests are said to be built at no great distance from the bower; but the eggs, as far as we know, have never been found. A pair of Satin Birds were presented to the Zoological Gardens in the Regent's Park some few years ago, and a bower, constructed by them, may be seen in excellent preservation in the British Museum.

The COLLAR BIRDS (*Chlamydera*) are nearly allied to the group last described, and are addicted to the same remarkable habit of bower-building. In these species the beak is compressed at its sides and notched towards its tip; the upper mandible is slightly vaulted; the wings are long and pointed, their third and fourth quills being of greater length than the rest; the tail is long and slightly rounded; the tarsi are covered in front with broad scales; the toes are large, and furnished with sharp-pointed claws.

THE SPOTTED COLLAR BIRD (*Chlamydera maculata*).

THE SPOTTED COLLAR BIRD.

The Spotted Collar Bird (*Chlamydera maculata*) is about ten inches long; the feathers upon the top of the head and region of the throat are of a beautiful brown, surrounded by a narrow black line, those upon the head being tipped with silver grey; the neck is surrounded by an elegant collar or plume of long feathers, of the colour of a peach blossom; the entire back, wings, and tail are covered with deep brown feathers, marked at their extremities with a round, brownish-yellow spot; the lower parts of the body are greyish white, the feathers upon the sides streaked with a zig-zag, pale brown line; the eye is deep brown, the beak and feet of a lighter shade. The young are without the feathery collar round the neck.

These interesting birds are inhabitants of Central Australia, where they make their nests and spend the greater part of their lives upon the numerous low bushes with which the plains are covered, hiding themselves in the thickest branches at the very tops of trees at the first approach of a stranger, and thus rendering the observation of their habits a work of considerable difficulty; those who are desirous of obtaining a specimen are therefore compelled to watch the tree on which they perch until thirst compels them to come down in search of water. Gould informs us that the bowers built by the Collar Birds are even more artistically constructed and elaborately decorated than those of the Satin Bird, and though erected in similar situations, are more arched and of greater size, some being as much as three feet long; like those we have described, the sides are formed of twigs woven together, but these birds are not content with so rough a screen, and cover their ball-room with a layer of fine and beautiful grass, large stones being employed by the clever little architects for the purpose of keeping all the materials firmly in the proper place. The interior is decorated in the most elaborate manner with various kinds of shells, gay scraps, bleached bones, or even the skulls of small animals; some of them being placed in such a manner as to form a sort of approach to the bower, whilst a goodly number are heaped up by way of ornament upon each side of the entrance. Instances have been known in which these energetic and persevering little creatures have collected as much as half a bushel of materials, rejecting everything as unsuitable for their purpose that is not quite white or very gay in colour, and actually going to search for shells upon the banks of rivers some miles distant from the spot on which they build. Gould tells us that these tasteful bowers are so firmly constructed as to serve as a pleasure apartment for several seasons in succession.

THE PIROL, OR GOLDEN ORIOLE (*Oriolus galbula*).

The birds constituting the second group of this family are recognisable by their elongated beaks, short feet, and rather long wings; in the plumage of the male, black and yellow predominate; but the prevailing colour of the female is a greenish grey.

THE PIROL.

The Pirol, Golden Oriole, or Cherry Bird (*Oriolus galbula*), is about nine and three-quarter inches long and eighteen broad; the wing measures about six inches, and the tail four inches. The female is a trifle smaller than her mate. The plumage of the male is principally of a splendid light yellow, only the bridles, wings, and tail being black; the roots of the quills and the tips of the tail-feathers are ornamented with a yellow spot. The colour of the female, as well as that of the one-year old male and young birds, is green above and white beneath; the front of the throat is of a light ash grey, marked with long greyish-black streaks; the tail is tipped with yellow, and the wing-feathers edged with a light border; the eyes are bright carmine, the beak a dull red, that of the female and young being greyish black, and their feet lead colour.

In Germany this beautiful species has received the name of the Whitsuntide Bird, from the fact that in most parts of Europe, except the extreme north, it usually makes its appearance at that season of the year. Central Asia, however, must be regarded as the actual habitat of the Pirol; there, as elsewhere, it frequents wooded districts, generally avoiding mountain tracts, and only tarrying for a short time amongst the forests of fir or pine trees passed over in journeying to another locality. Birch or oak trees afford it a favourite retreat, and upon these it will establish its head-quarters, only leaving them to fly about the gardens or orchards in the immediate neighbourhood in search of food, and thus becoming very troublesome to the inhabitants at the season when the cherries ripen. During the course of its migrations, the Pirol visits the very centre of Africa; we ourselves have seen it as far south as eleven degrees north latitude, and it is constantly met with in the western parts of the continent. In its habits this bird is distinguished by many peculiarities, although living in the immediate vicinity of man; it is extremely shy, and constantly endeavours to conceal itself from his view. In disposition it is always mild and restless, flying and fluttering about incessantly from one tree or branch to another, only coming down to perch upon a bush, or searching the ground when desirous of procuring insect food. Its gait is so extremely awkward, that it may be said to progress by means of a series of short clumsy jumps, rather than by hopping in the usual manner. Its flight is heavy, noisy, rapid, and, like that of the Starling, very undulating. Amongst themselves these birds are extremely quarrelsome, often pecking and hunting each other about for a quarter of an hour at a time upon the slightest provocation—indeed, they exhibit a most pugnacious disposition towards all their feathered companions. Their voice is very loud, full, and agreeable, and they would seem never to be weary of exhibiting their vocal powers; a pair of them is sufficient to enliven the whole wood in which they take up their abode.

The nest, which is most artistically constructed, is usually suspended from a forked and slender branch; in shape it is like a deep basin. The walls are formed of blades of grass, vine-tendrils, wool, cobwebs, and a great variety of similar materials, the interior being snugly lined with a thick bed of wool, feathers, or fine grass; this beautiful structure is most skilfully fastened in its place by means of long threads or twigs, moistened with saliva from the beak of the bird, and then wound several times round the branch, their ends being woven into the body of the nest. Both parents assist in the formation of the outer wall of this pretty fabric, but the female alone undertakes the preparation of the warm bed upon which the brood are to be deposited. The eggs, five in number, are laid about June; they are smooth, white, and marked with dark grey or reddish spots. Passler tells us that the affection of these birds for their young progeny is very great, and that they show considerable courage and determination in defending their little family if any attempt is made to touch their nest. At noon the female is relieved from her watch by her mate, who remains upon the nest whilst she flies away hurriedly to snatch a hasty meal from the neighbouring fields. The young are hatched within a fortnight; they grow with great rapidity, and moult their feathers before leaving the nest. Should a pair of Pirols be driven from their home whilst brooding, they will at once set about their preparation for another family, but will never recommence if disturbed a second time. Various kinds of insects, caterpillars, butterflies, or worms are consumed by these birds in great numbers, and they also eat cherries and other descriptions of fruit in abundance. Notwithstanding its usual timidity, the Pirol has been known to become so tame when caged as to feed from its keeper's hand or mouth; and in one instance that came under our notice, would pull its master by the hair if he omitted to pay it the attention desired.

Africa and Southern Asia possess many species of Orioles; these it is needless to enumerate, as they closely resemble those that inhabit Europe. We find, however, in Australia another group of these birds, which we must mention, inasmuch as they form a connecting link between the Pirols and the Birds of Paradise.

THE GOLDEN-CRESTED ORIOLE.

The Royal or Golden-crested Oriole (*Sericulus chrysocephalus*), one of the most beautiful creatures inhabiting that fertile and highly-favoured continent, is distinguished by its short and feeble bill, the upper mandible of which is very distinctly notched, its straightly cut, or very slightly rounded tail, and the peculiar nature of its feathers. The head, back of the neck, and an arched line which passes from the nape over the breast, are bright yellow, while the rest of the plumage is velvety black. The first quill is black, the rest of the primaries yellow in the middle and black at the root and tip; the secondaries are yellow, if we except a narrow border to the outer web. The eye is pale yellow, the beak of a deeper shade, and the feet black. In the female the head and throat are brownish white, the top of the head being marked with a large black spot; the upper portions of the wings and tail are olive brown, the feathers of the back tipped with triangular brownish-white spots; the belly is olive brown, and marked with similar but still more distinct spots. The eyes are brown, and the feet black. The young resemble their mother. The full-sized birds are about eight inches and three-quarters in length.

We learn from Gould that this splendid species is confined to Eastern Australia, and is very numerous in the bush about Moreton Bay, as also upon the neighbouring islands. In its habits it resembles the Pirol, but is much quieter. It has no fear of man, and delights to perch in full view upon the highest and most conspicuous branches of the trees; it would, however, seem as if the old males learnt by experience the danger to which they expose themselves by this lavish display of their gorgeous plumage, for they are much more prudent in this respect than the females and young males. As regards their mode of incubation Gould was unable to obtain any trustworthy intelligence.

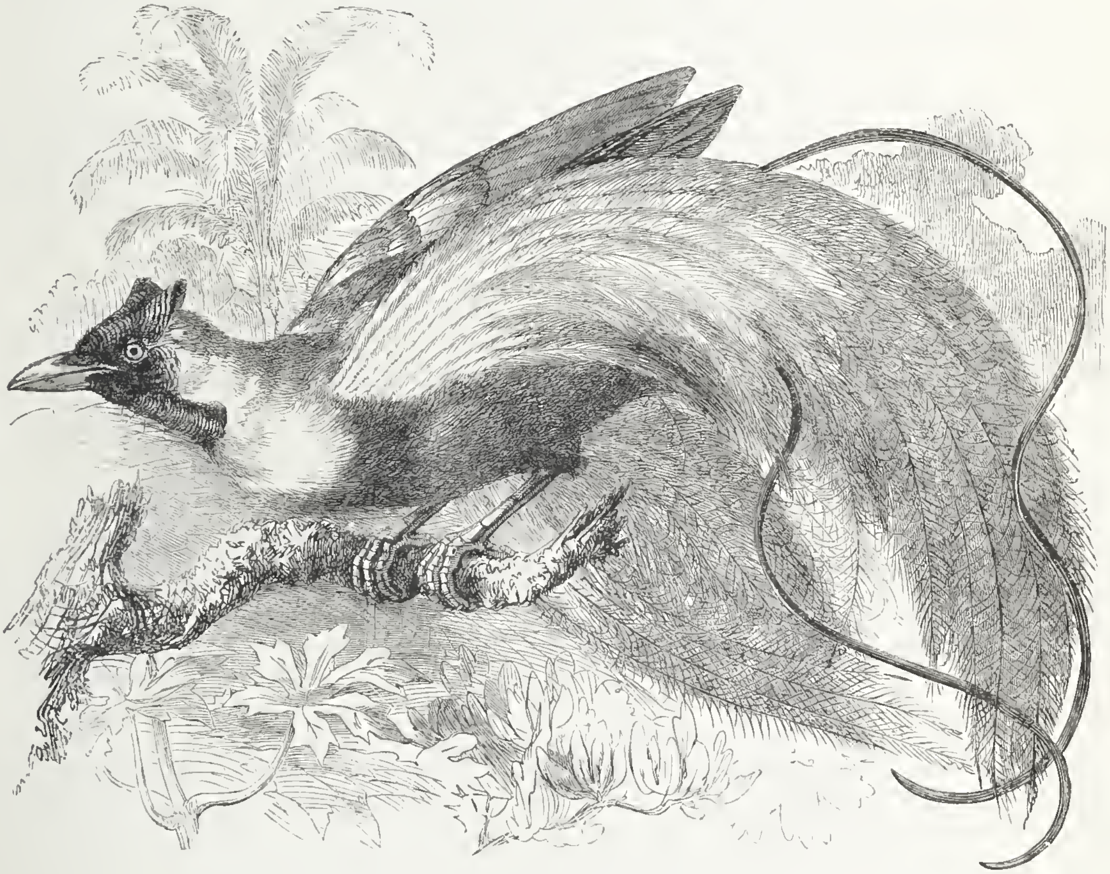
But few years have passed away since Europeans first became acquainted with the living forms of the magnificent creatures we are now about to describe. Their glowing feathers, it is true, had long been familiar to every eye, but the natives of New Guinea, in preparing their skins for exportation, had removed all trace of legs, thus giving rise to most extravagant tales about the life they led in their native lands. The Birds of Paradise, as they were called on account of their apparent want of feet and great beauty, retained, it was popularly supposed, the forms they had borne in the Garden of Eden, and lived upon no more substantial nourishment than dew, or the ether through which it was imagined that they perpetually floated by the aid of their long, cloud-like plumage, only seeking an

BIRDS OF PARADISE.

occasional change of position in suspending themselves for a few minutes from the branches of a tree by some of the tendril-like feathers of their tail. In vain naturalists endeavoured to prove the absurdity of these and many other fables; the public mind would not be convinced, and for centuries retained and cherished these most poetical notions. Since those days many travellers in New Guinea and its islands have seen and described the Birds of Paradise, and we are indebted to Bennett, Wallace, and Rosenberg for many very interesting but by no means exhaustive particulars as to their habits and mode of life.

THE BIRDS OF PARADISE.

The Birds of Paradise (*Paradiseæ*) are magnificent Ravens, varying in their size from that of a Jay to that of a Lark, and are distinguished not only by the exquisite beauty of their feathers, but by the elegance of their shape. In this family the beak is of moderate size, straight, or slightly curved, compressed at its sides, and covered at the base with a feathered skin, by which the nostrils are concealed; the wings are of moderate length, and very decidedly rounded, as the sixth and seventh quills are much longer than the rest; the tail is either composed of twelve rather long feathers, combined with many thread-like feathery appendages of great length, or is extremely long, simple in form, and sharply graduated; the feet are powerful, the toes long, and armed with sharp, crooked claws. In some species the plumage upon the sides is most peculiar in its appearance, the feathers growing to a great length, and splitting, as it were, into several light and delicate portions. These peculiarities are only observable in the male, both the female and young being much more simply clad. The Birds of Paradise are found exclusively in New Guinea and the neighbouring islands,



THE RED BIRD OF PARADISE (*Paradisea rubra*).

Arnisland, Salawati, Meisol, and Waigiou, each of these localities possessing one or more distinct species.

Rosenberg has given us the following description of the manner in which the natives prepare these valuable creatures for the European and other markets :—The Papuans shoot the Bird of Paradise with arrows, and then strip the body of its skin, cut away the feet and a portion of the tail-feathers; they then insert a stick through the beak, and thus supported, the skin is hung to dry in the smoke of a wood fire in order to preserve it from the attacks of vermin. The natives of Meisol, on the contrary, do not remove the feet or any portion of the tail, as they have learnt by experience that the unmutilated skins command the highest price. These skins are bought by merchants from Madagascar, Teimate, and Eastern Seram, and conveyed to Singapore, from whence they are forwarded to Europe or China. According to information received from these merchants the finest birds come from the northern coast of New Guinea, the Sultan of Tidore receiving annually a certain number of the skins obtained within his territory as tribute.

The TRUE BIRDS OF PARADISE (*Paradiseæ*) possess a plume of long split feathers, placed at the first joint of the wings, growing from a portion of skin about an inch in length, which can be spread out or folded up at pleasure. The females are without this appendage. The two middle tail-feathers are usually extremely long, and become enlarged at the tip.

THE FOOTLESS BIRD OF PARADISE.

The Footless Bird of Paradise (*Paradisea apoda*), as it has been called, to perpetuate the memory of the fables to which we have alluded, is a species about thirteen inches long. The predominant colour of the plumage is a beautiful chestnut brown, the forehead a rich black, shaded with emerald green; the top of the head and upper part of the neck are lemon coloured, the throat greenish gold, the upper throat violet brown; the long, feathery plumes at the sides are a brilliant orange, spotted with purple at their tips, but these soon lose their freshness and beauty when long exposed to the rays of the sun. The eye is pale yellow, the beak and feet blueish grey. The colour of the female is brownish grey upon the upper part of the body, the throat is greyish violet, and the belly reddish yellow. This bird appears exclusively to inhabit the island of Aru.

THE WUMBI.

The Wumbi (*Paradisea Papuana*) is somewhat smaller than the species last described, not exceeding twelve inches in length. The back of this bird is chestnut coloured; the lower parts of the body a deep reddish brown; the top of the head, nape, and upper part of the throat and sides are pale yellow; the feathers upon the brow and beak black, with a green gloss; the throat emerald green; the eye is of a whitish yellow, the beak and feet deep blue. The young bird, on first leaving the nest, is entirely brown; the upper portions of the body being of a deeper shade than the rest; the tail-feathers are of equal length, the two centre ones terminating in a slight tuft; after the first moulting, the head and nape of the neck are pale yellow, and the brow and throat gleam with metallic green; the two centre tail-feathers are a few inches longer than those in the first plumage. After the third change, these feathers are prolonged into mere bare shafts, measuring about fifteen inches; and the beautiful plumes begin to sprout from the sides, growing until at last they attain the enormous length of fifty or sixty inches, and in very old birds have been known even to exceed that size. Rosenberg tells us that this species is found upon the islands of Meisol and Salawati in considerable numbers; upon the eastern coast of New Guinea it is more scarce.

THE RUBY OR RED BIRD OF PARADISE. (*See Coloured Plate* VIII.)

The Ruby or Red Bird of Paradise (*Paradisea rubra*) is distinguished from the preceding species by a golden green plume, with which the front of its head is decked. The back is russet yellow, a streak of this colour passing like a broad band over the breast and under side of the body; the breast and the wings are reddish brown, the base of the beak and a patch behind the eyes are velvety black; the throat emerald green. The plumes upon the sides are of a magnificent red, each feather terminating in a circular tip; the tail-feathers have long shafts, which curl outwards; the eye is light yellow; the back and feet greyish blue. In the female the forehead and throat are of a rich brown; the upper part of the body and belly reddish brown, the back of the head, throat, and breast bright red.

The Red Bird of Paradise is extremely rare, as it is only found, and that in small numbers, upon the island of Waigiou. The three species we have mentioned closely resemble each other in their habits: all are lively and intelligent, exhibiting (if we may so term it) a certain amount of coquetry in the manner in which they display their glorious plumage. Travellers who have seen these splendid creatures hovering in their native element speak with rapture of their beauty; and Lesson tells us that on one occasion he quite forgot to fire at a magnificent specimen as he watched his intended victim float away—

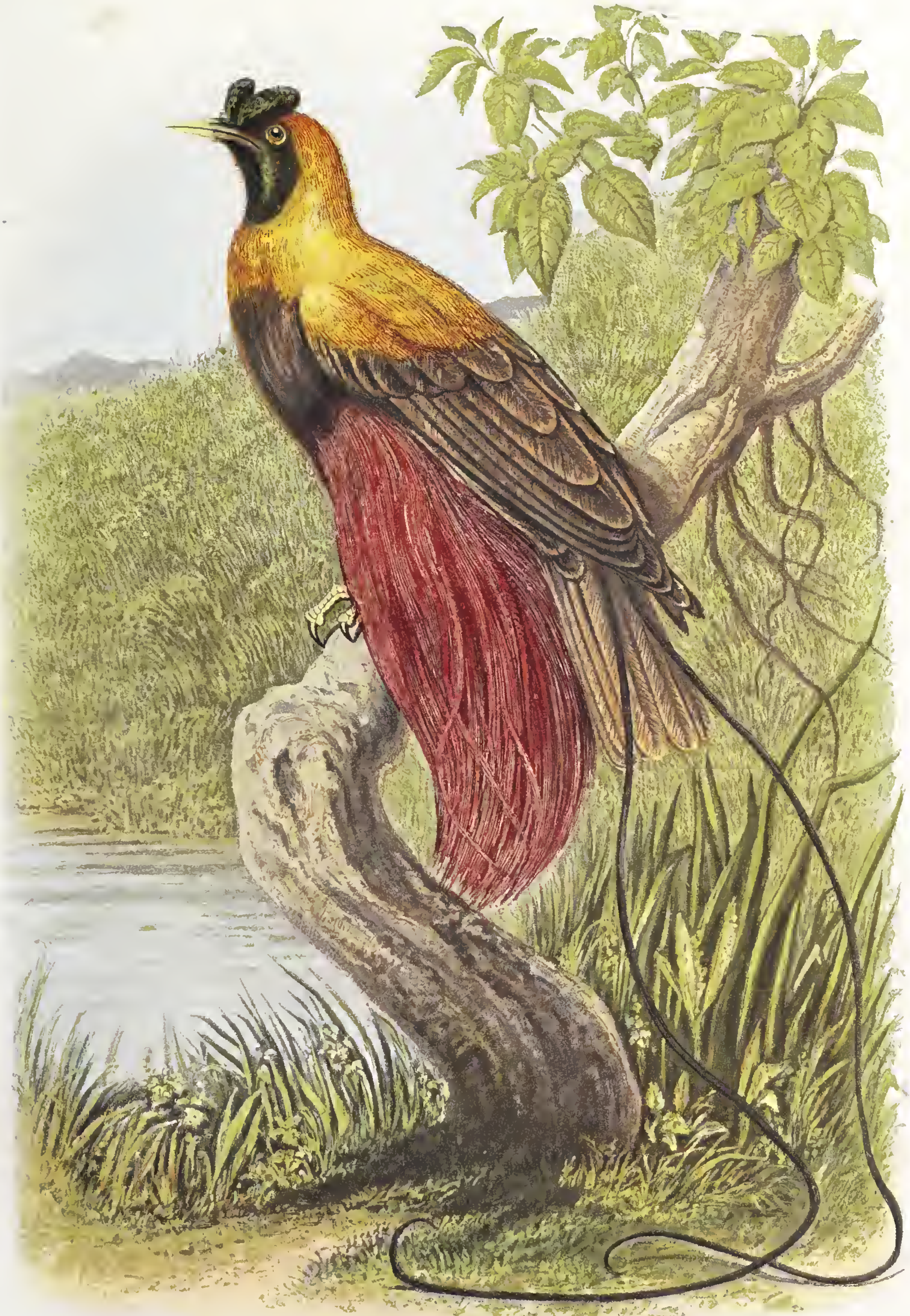
> "Upon its waving feathers poised in air—
> Feathers, or rather clouds of golden down,
> With streamers thrown luxuriantly out
> In all the wantonness of wingèd wealth."

According to Rosenberg, the Birds of Paradise are migratory, living partly upon the coast and partly in the interior of the country, which they visit as soon as the fruit is quite ripe. We have seen a flock of these beautiful creatures winging their way to a tree, that after having been fired upon, returned almost immediately to the same spot; but this is by no means usual—on the contrary, as a rule they are extremely shy, and very difficult to obtain with the gun. Their cry is hoarse, and often followed by a scraping kind of sound; it may be heard both in the morning and evening, but rarely during the day. Lesson tells us that whilst creeping amongst the branches in search of the insects that constitute their favourite food, they utter a soft clucking note, entirely unlike their call, which is only heard when the bird is perched high upon the tops of the trees. During the entire day their graceful forms may be seen flying incessantly from one tree to another, never remaining perched for more than a few minutes upon the same branch, and concealing themselves among the foliage at the first suspicion of danger. Before sunrise they are already on the alert, and busied in their search for the fruit and insects upon which they subsist; in the evening all the various members of the party congregate at the summit of a high tree, where they pass the night. Lesson informs us that the Bird of Paradise is often seen flying in parties of some forty or fifty, under the guidance of a leader, who soars considerably above the flock he is conducting; their cries as they struggle with the wind are not unlike those of the Starling; when much incommoded by a strong breeze their note resembles the call of the Raven. Should a storm arise, they will at once soar high into the air, as though to escape the power of the blast; but in spite of all their efforts they are often rendered completely helpless, as the wind blows aside and entangles their long tails and waving plumes, and not unfrequently forces them to fall heavily to the earth, or into the sea; many are thus drowned, and others are obliged to lie upon the ground until they have recovered sufficiently from the shock to arrange their disordered and matted feathers. On the eastern and northern coast of North Guinea and in Meisol, the breeding season commences in May, but upon the western coast and in Salawati the eggs are not laid till November.

Lesson is of opinion that the Bird of Paradise lives in a state of polygamy, and tells us that the males are most active in their endeavours to show their glorious apparel to full advantage when desirous of attracting the attention of the females. We learn from Rosenberg that in order to obtain the Bird of Paradise, the natives, during the dry season, build little huts of twigs and leaves amongst the branches in one of the trees usually selected as a sleeping-place. About an hour before sunset this leafy bower is occupied by a man who is considered to be a practised shot; silently he crouches until the flock begins to arrive, and then one after another he marks them out and strikes them to the ground, with an arrow armed with a conical wooden cap as large as a teacup, so arranged as not to injure the plumage of the bird. In some places limed twigs are employed for this purpose, and in others snares are laid upon the branches of the fruit-trees in such a manner as to entangle the foot of the unsuspecting victim, who, when thus caught, is at once drawn down by means of a long string.

Mr. Wallace gives the following interesting account of his experience among these beautiful creatures in their native haunts:—"When I first arrived" (at Waigiou) "I was surprised at being told there were no Birds of Paradise at Muka, although there were plenty at Bessir, a place where the natives caught them and prepared the skins. I assured the people I had heard the cry of these birds close to the village, but they would not believe that I could know their voice. However, the first time I went into the forest I not only heard but saw them, and was convinced there were plenty about; but they were very shy, and it was some time before we got any. My hunter first shot a female, and I one day got close to a very fine male. He was, as I expected, the rare red species, *Paradisea rubra*, which alone inhabits the island, and is found nowhere else. He was quite low down, running along a bough searching for insects, almost like a Woodpecker, and the long, black, ribbon-like filaments in his tail hung down in the most graceful double curve imaginable. I covered him with my gun, and was going to use the barrel, which had a very small charge of powder and number eight shot, so as not to injure his plumage, but the gun missed fire, and he was off in an instant among the thickest jungle." After describing other unsuccessful attempts, Mr. Wallace proceeds:—"At length the fruit ripened on the fig-tree close by my house, and many birds came to feed upon it; and one morning, as I was taking my coffee, a male Paradise Bird was seen to settle on its top. I seized my gun, ran under the tree, and gazing up, could see it flying across from branch to branch, picking a fruit here, and another there, and then, before I could get a sufficient aim to shoot to such a height (for it was one of the loftiest trees of the tropics), it was away into the forest. They now visited the tree every morning, but stayed so short a time, their motions were so rapid, and it was so difficult to see them, owing to the lower trees which impeded the view, that it was only after several days' watching, and two or three misses, that I brought down my bird—a male in the most magnificent plumage."

We are indebted to Dr. Bennett for the following graphic account of a Bird of Paradise, which lived for nine years in the aviary of Mr. Beale of Macao:—"This elegant creature has a light, playful, and graceful manner, with an arch and impudent look; dances about when a visitor approaches the cage, and seems delighted at being made an object of admiration; its notes are very peculiar, resembling the cawing of the Raven, but its tones are by far more varied. During four months of the year, from May to August, it moults. It washes itself regularly twice daily, and after having performed its ablutions throws its delicate feathers up nearly over the head, the quills of these feathers having a peculiar structure, so as to enable the bird to effect this object. Its food is boiled rice mixed up with soft egg, together with plantains, and living insects of the grasshopper tribe; these insects, when thrown to him, the bird contrives to catch in its beak with great celerity; it will eat insects in a living state, but will not touch them when dead. I observed the bird, previously to eating a grasshopper, place the insect upon the perch, keep it firmly fixed with the claws, and divesting it of the legs, wings,



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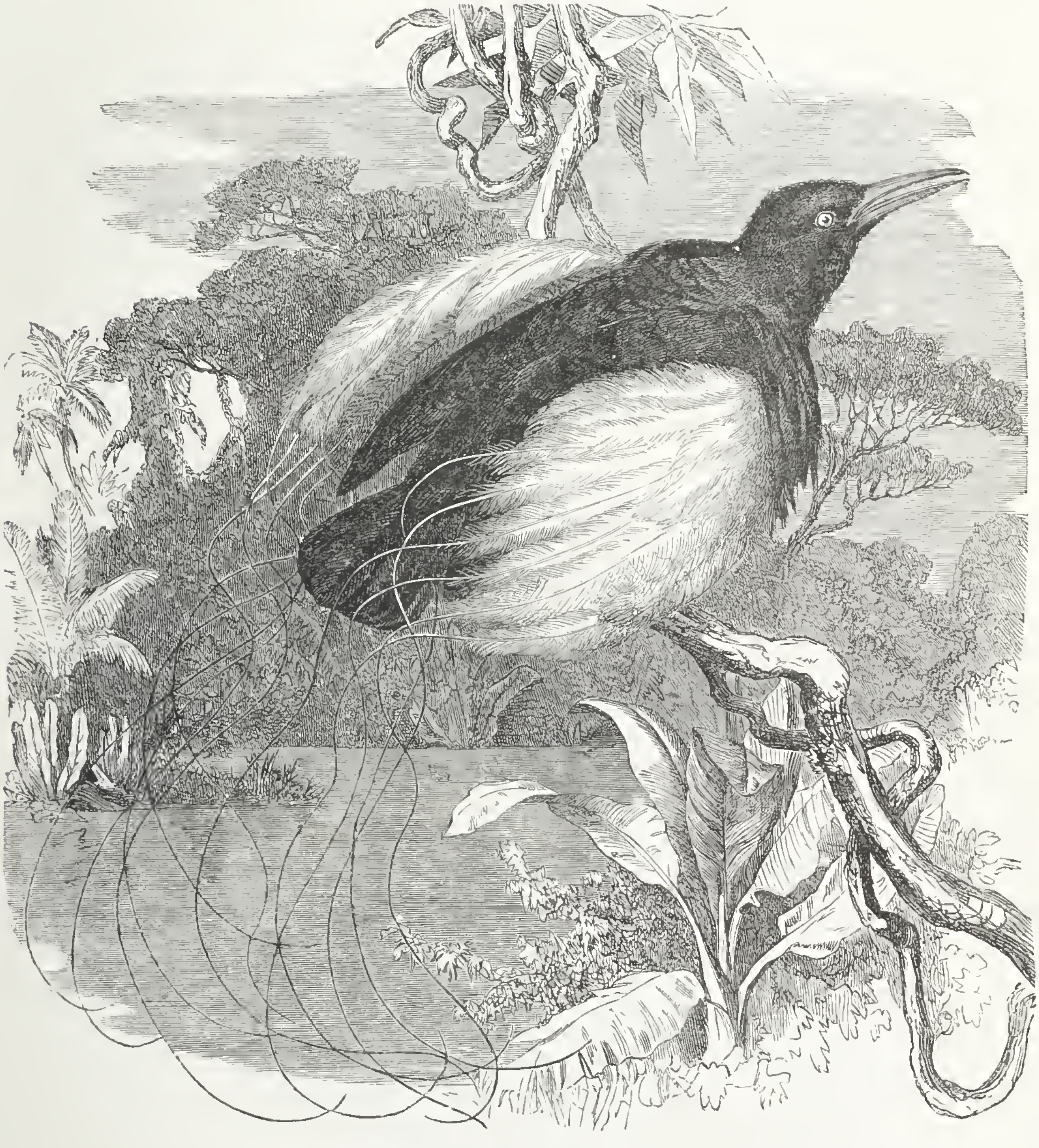
[illegible] BIRD OF PARADISE — Paradisea rubra.

Three-fourths nat. [illegible]

&c., devour it, with the head always placed first. It rarely alights upon the ground, and so proud is the creature of its elegant dress that it never permits a soil to remain upon it, and it may frequently be seen spreading out its wings and feathers, and regarding its splendid self in every direction, to observe whether the whole plumage is in an unsullied condition. The sounds uttered by this bird are very peculiar; that which appears to be a note of congratulation resembles somewhat the cawing of a Raven, but changes to a varied scale in musical gradations—a *he*, *hi*, *ho*, *how*, repeated frequently and rapidly, as briskly and playfully he hops round and along his perch, descending to the second perch to be admired, and congratulate the stranger who has made a visit to inspect him. He frequently raises his voice, sending forth notes of such power as to be heard at a long distance, and as it would scarcely be supposed such a delicate bird could utter. These notes are *whack*, *whack*, *whack*, uttered in a barking tone, the last being in a low note as conclusion. A drawing of the bird of the natural size was



THE RESPLENDENT EPIMACHUS (*Seleucides resplendens*).

made by a Chinese artist. This was taken one morning to the original, who paid a compliment to the artist by considering it one of his own species. The bird advanced towards the picture, uttering at the same time its cawing, congratulatory notes; it did not appear excited by rage, but pecked gently at the representation, jumping about the perch, knocking its mandibles together with a chattering noise, and cleaning them against the perch, as if welcoming the arrival of a companion. After the trial with the picture a looking-glass was brought, to see what effect it would produce upon the bird, and the result was nearly the same; he regarded the reflection of himself most steadfastly in the mirror, never quitting it during the time it remained before him. When the glass was removed to the lower from the upper perch he instantly followed, but would not descend upon the floor of the cage when it was placed so low. It seemed impatient, hopping about without withdrawing its gaze from the mirror, uttering the usual cawing notes, but with evident surprise that the reflected figure (or, as he seemed to regard it, his opponent) imitated so closely all his actions, and was as watchful as himself. There was, however, on his part no indication of combativeness by any elevation of his feathers, nor was any irritation displayed at not being able to approach nearer to the supposed new comer from his own native land. His attention was directed to the mirror during the time it remained before him, but when removed he went quietly and composed himself upon the upper perch as if nothing had excited him. One of the best opportunities of seeing this bird in all its beauty of action as well as display of plumage is early in the morning, when he makes his toilet; the beautiful sub-alar plumage is then thrown out and cleaned from any spot that may sully its purity by being gently passed through the bill; the short, chocolate-coloured wings are extended to the utmost, and he keeps them in a steady flapping motion, as if in imitation of their use in flight, at the same time raising up the delicate long feathers over the back, which are spread in a chaste and elegant manner, floating like films in the ambient air. When it has picked and thoroughly cleaned its feathers, elevating its tail and long shaft feathers, it raises the delicate plumage of a similar character to the sub-alar, forming a beautiful crest, and throwing up its feathers with much grace, appears as proud as a lady in her full ball dress. His prehensile power in the feet is very strong, and, still retaining his hold, the bird will turn himself round on his perch. He delights to be sheltered from the glare of the sun, as that luminary is a great source of annoyance to him if permitted to dart its fervid rays directly upon the cage. This bird is not at all ravenous, but eats rice leisurely, almost grain by grain."

THE KING OF THE BIRDS OF PARADISE.

The King of the Birds of Paradise (*Cincinnurus regius*) may be selected as representing the SPIRAL TAILS (*Cincinnurus*), as the various species composing the second group of this family have been called. In size it is inferior to any of its congeners as yet described; it is, moreover, distinguished from them by the delicacy of its beak and by the less remarkable development of the plumes with which its sides are adorned. The two centre tail-feathers twine like the tendrils of a vine, and are entirely without a web, except at their extremity, which is furnished with a wheel-like feathery expansion. The male of this species is of a ruby red upon the upper portions of the body; the brow and top of the head are orange, the throat yellow, and the belly greyish white; the eyes are surmounted by a small black spot, and a band of metallic green divides the dark-coloured breast from the shades upon the belly; the feathers upon the sides are grey, marked with irregular white and red lines, and terminate in a bright emerald green tip. The female is reddish brown upon the upper part of the body, and below of a reddish yellow streaked with brown; the wings are gold colour, the beak is dark brown, and the feet light blue.

This species is found over a larger extent of country than any other member of its family, occupying not only a large portion of North Guinea, but most of the surrounding islands, where it frequents the bushes growing upon the sea-coast. Its movements are extremely restless, and, like other Birds of Paradise, it seems to revel in its own beauty as it spreads its plumage and raises the golden collar round its throat, meanwhile demonstrating its satisfaction by uttering a soft noise not unlike the mewing of a kitten. Writers of former days inform us that these beautiful creatures fly about in parties under the guidance of a male bird distinguished from the rest by the superior development of the tail, and that the flock are inconsolable if they lose their leader; but more modern naturalists do not mention this supposed peculiarity, which we must therefore regard as a fable.

THE COLLARED BIRD OF PARADISE.

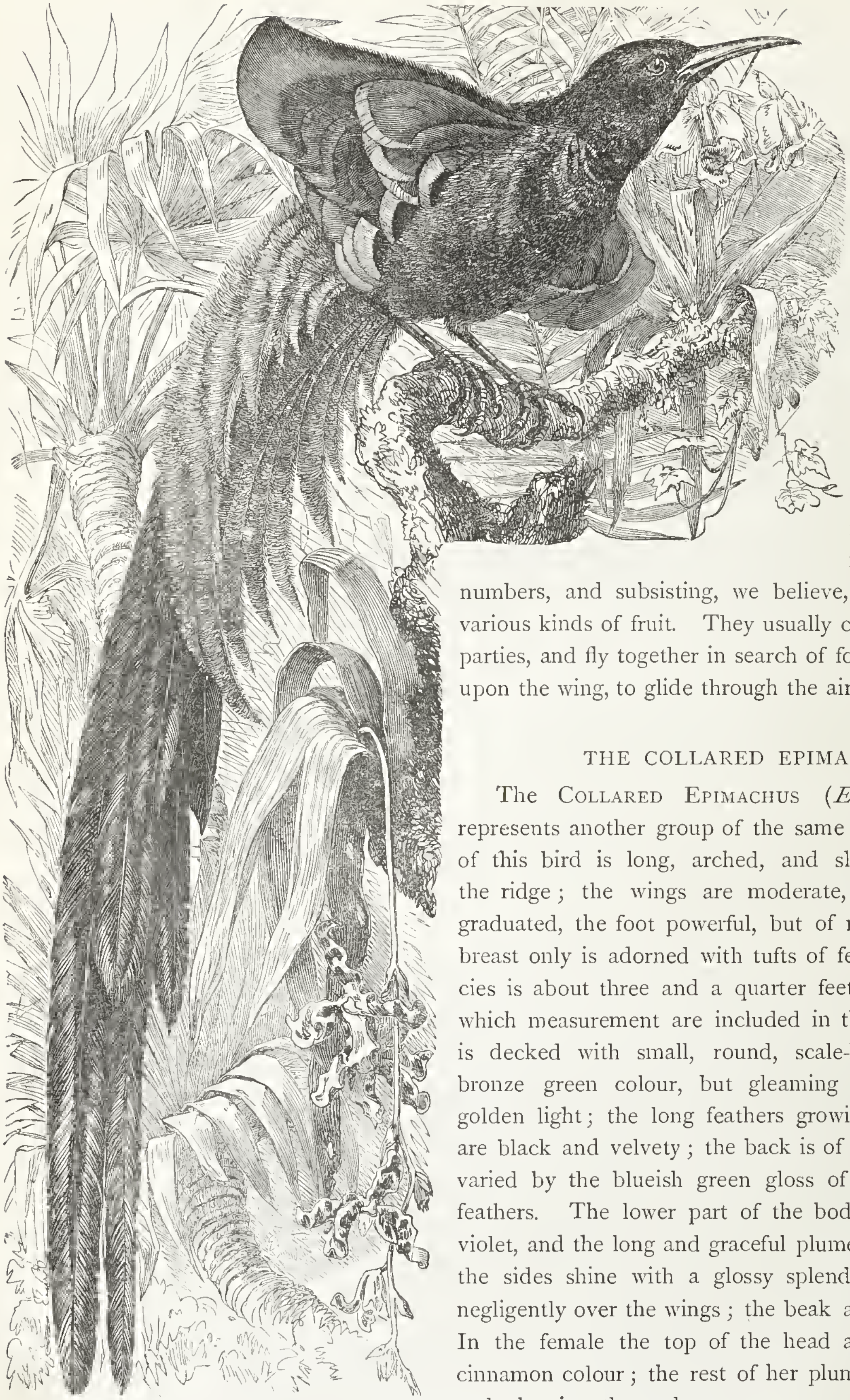
The Collared Bird of Paradise (*Lophorina superba*) is an extremely rare species, inhabiting Northern New Guinea. It is distinguished by the long feathers by which the upper part of its back and the nape of its neck are surmounted, the latter even extending over the breast, and thus forming a kind of collar; but there are no elongated feathers upon the sides, and it wants the webless stems found on the tail of some species; the plumage in general is black, the long feathers upon the breast are of a brilliant metallic green; the flowing feathers of the shoulder fall like a mantle over the body, and can be raised when the bird is desirous of appearing in all its beauty.

The Six-feathered Bird of Paradise (*Parotia sex-pennis*) represents a race of extremely beautiful and rare creatures, which, owing to the peculiarities of their plumage, have been classed as a separate tribe under the name of PAROTIA. In these birds the side feathers are much elongated, but not disintegrated, as in the species described above; the tail is graduated, and none of its feathers are destitute of a web. Upon the head and behind the ear are placed six long shafts, from which the members of this group have derived their name, each terminating in a feathery web. The plumage is of a deep black, except upon the breast, which is golden green.

The gorgeously attired EPIMACHI resemble the Birds of Paradise in the peculiar elongation of the side and tail feathers and in the construction of their feet; the beak alone differs in its formation, being long, thin, and delicately curved.

THE RESPLENDENT EPIMACHUS.

The Resplendent Epimachus (*Seleucides resplendens*, or *Seleucides alba*) is recognisable by the tufts upon the breast, formed of large, rounded, and brightly bordered feathers, and by the graceful plumes that adorn its sides; these latter are downy in their upper portions, and terminate in very long and webless shafts. According to Rosenberg, this extraordinary bird is about thirty-two and a half inches in length. The velvet-like feathers of the head, neck, and breast are black, but gleam with a deep green or violet shade; the tufts upon the sides of the breast are also black and edged with dazzling emerald green; the plumes upon the sides are of a splendid golden yellow, but soon lose their brilliancy after death, changing to a dirty white; the wings and tail are glossy violet, and appear in some lights to be marked with stripes. The plumes for which this species is so celebrated are most remarkable; the longest of them reach to the tail, and there terminate in long, horsehair-like threads of a bright yellow towards their root, and for the rest of their length of a brown colour. The eyes are scarlet, the beak black, and the feet of a yellowish flesh tint. In the female the top of the head and lower part of the throat are black, the velvety feathers upon the head shining with a bright purple lustre; the lower part of the back, the wings, and tail are reddish brown, the large quills being black upon their inner web; the whole of the lower parts of the body are greyish white or a dirty yellowish brown, marked with small undulating black streaks. The young males at first



THE COLLARED EPIMACHUS (*Epimachus magnus*).

resemble their mother, but after the first moulting the throat is grey, after the second the belly acquires its yellow tint, and the tufts upon the sides begin to make their appearance.

The Resplendent Epimachus is found exclusively upon the island of Salawati, frequenting rocky districts in considerable numbers, and subsisting, we believe, upon insects and various kinds of fruit. They usually congregate in small parties, and fly together in search of food, seeming, when upon the wing, to glide through the air with great facility.

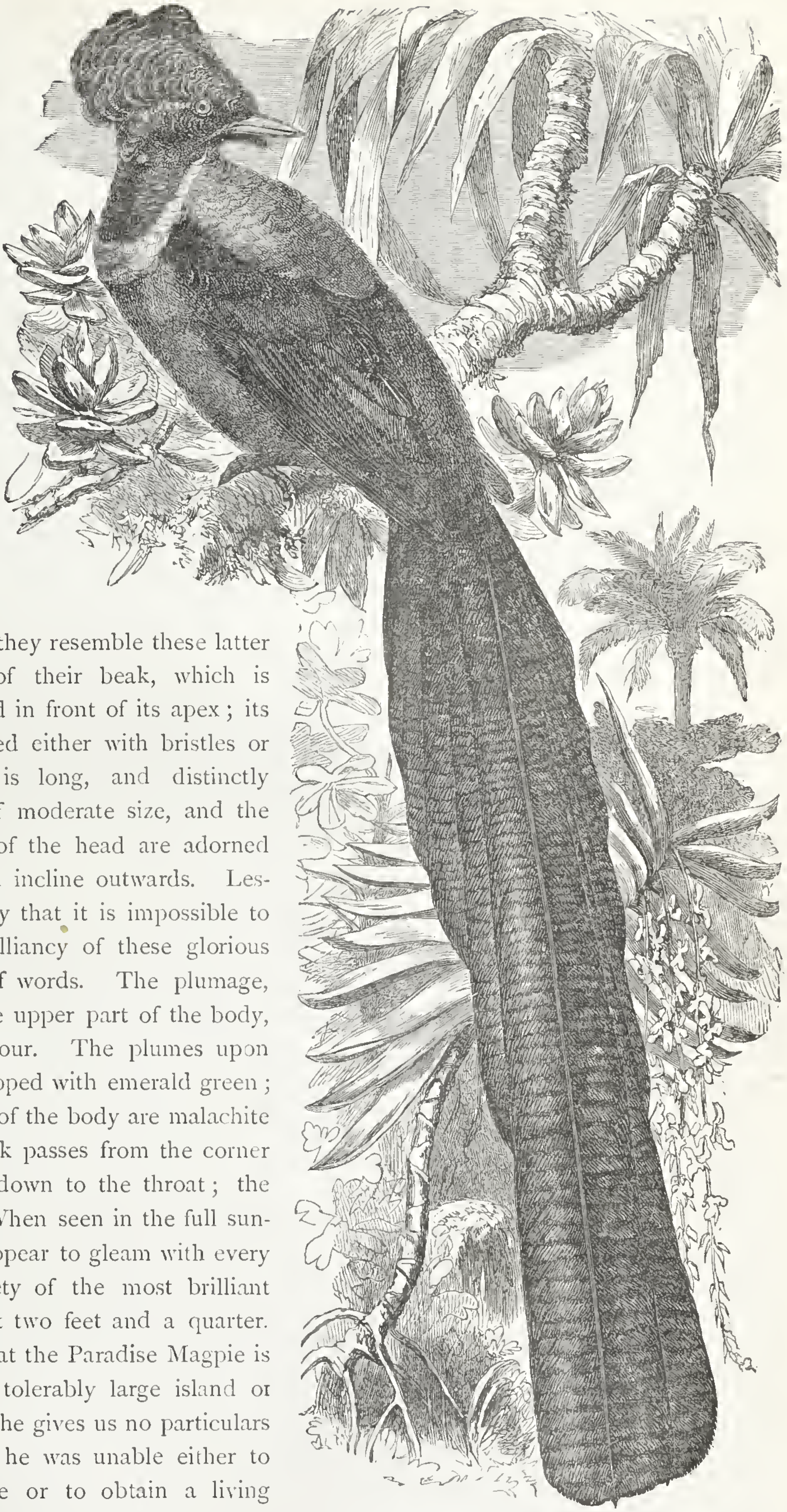
THE COLLARED EPIMACHUS.

The Collared Epimachus (*Epimachus magnus*) represents another group of the same family. The beak of this bird is long, arched, and slightly rounded at the ridge; the wings are moderate, the tail long and graduated, the foot powerful, but of no great size; the breast only is adorned with tufts of feathers. This species is about three and a quarter feet long, two feet of which measurement are included in the tail. The head is decked with small, round, scale-like feathers of a bronze green colour, but gleaming with a blue and golden light; the long feathers growing upon the nape are black and velvety; the back is of similar colour, but varied by the blueish green gloss of many long, broad feathers. The lower part of the body is of a blackish violet, and the long and graceful plumes that sprout from the sides shine with a glossy splendour as they hang negligently over the wings; the beak and feet are black. In the female the top of the head and nape are of a cinnamon colour; the rest of her plumage resembles the male, but is rather paler.

This splendid creature is so mutilated during its preparation for sale by the natives, that we believe no perfect specimen has as yet been brought to Europe. Rosenberg tells us that it inhabits New Guinea, but is never seen upon the surrounding islands.

Some naturalists place among the Birds of Paradise two species, of which we know very little, that have been named the

MAGPIE BIRDS OF PARADISE (*Astrapiæ*); others regard them as belonging to the Thrushes, as they resemble these latter birds in the construction of their beak, which is straight, and slightly flattened in front of its apex; its base, moreover, is unfurnished either with bristles or velvety feathers; the tail is long, and distinctly graduated; the wings are of moderate size, and the legs powerful; both sides of the head are adorned with a tuft of feathers which incline outwards. Lesson and other naturalists say that it is impossible to describe the beauty and brilliancy of these glorious creatures by any selection of words. The plumage, which is purple black on the upper part of the body, gleams with metallic splendour. The plumes upon the head are blueish red, tipped with emerald green; the whole of the lower parts of the body are malachite green; a reddish violet streak passes from the corner of the eyes in a semicircle down to the throat; the legs and beak are black. When seen in the full sunlight these gorgeous birds appear to gleam with every conceivable effect and variety of the most brilliant colours; their length is about two feet and a quarter. We learn from Rosenberg that the Paradise Magpie is found exclusively upon the tolerably large island oɪ Obi, near Gilwick Bay, but he gives us no particulars as to its life and habits, as he was unable either to observe it in the wild state or to obtain a living specimen.



THE MAGPIE BIRD OF PARADISE (*Astrapia gularis*).

THE RAVENS PROPER (*Coraces*).

This family comprehends some of the largest members of the order. In these birds the beak is large, strong, curved towards the point, and toothed on its cutting edge, the upper mandible being only occasionally slightly hooked; the wings are of moderate size, and rounded at their extremities, the fourth quill being larger than the rest; the tail is formed by twelve feathers, which are either graduated or straight at the extremity. The plumage is rich, and its feathers large, those at the base of the beak usually resembling hairs or bristles; the rest are extremely glossy. Both sexes are alike in colour, and the young differ but little from the parent birds.

The Ravens inhabit every part of the globe, their mode of life and appearance varying slightly, according to the climate in which they live. Warm countries, however, appear more congenial to them than the northern parts of the earth, where they are met with in comparatively small numbers. By far the greater number are stationary, rarely, if ever, leaving the place that gave them birth, except to make short excursions in the neighbourhood, whilst others migrate to countries at no great distance from their native land. If we except the power of song, the Ravens combine in themselves every gift possessed by any members of the order to which they belong. They move with ease upon the ground, fly rapidly and lightly, and are remarkable for the very equal development of all their faculties, including the sense of *smell.*

This family has been divided into many groups, all of which present very marked peculiarities.

The MOUNTAIN CROWS, or CHOUGHS (*Fregili*) are recognised by their long, slender bodies, long wings, and short tails; their beaks are slender and pointed, slightly arched, and, like their feet, brightly coloured. Their plumage is black and glossy. Europe has two species of these birds, and several others inhabit India and Australia.

THE CHOUGH.

The Chough, or Mountain Crow (*Fregilus graculus*) is distinguished by the peculiar formation of its long, thin, arched beak, which, like its short-toed foot, is of a brilliant scarlet colour. The eyes are dark brown, and the plumage of an uniform glossy blueish black. This species is about fifteen inches long and thirty-one inches across; the wing measures ten and a half inches, and the tail five and a half inches. The female is scarcely distinguishable from her mate, but the young are known by their black feet and beak; after the first moulting, however, they resemble the older birds.

Almost all the mountains of Europe afford a home to these Crows, which are met with in considerable numbers in Scotland, in Cornwall, and in Wales: in Spain they are very abundant, but are comparatively rare among the Swiss Alps. In most of the mountains that they frequent they occasionally ascend to the summits of the loftiest peaks, and are usually found as high as the snow-line, descending to the valleys in severe winters. Travellers in these mountain regions often hear the voices of thousands of these birds from amongst the rocks, and those who take the trouble to observe their movements soon perceive that they appear with a certain kind of regularity in the same localities, generally leaving their sleeping-place early in the morning to search for food, and returning about nine o'clock to their perch; before noon they again leave, and again return to pass the mid-day hours in the holes with which their favourite haunts abound, keeping, however, a vigilant watch against intruders, even when enjoying their noontide rest, and giving warning of any approaching danger with loud and piercing cries; nor are these precautions by any means superfluous, seeing that Hawks and others of their enemies are always on the alert to seize an unwary straggler, which, on such occasions, usually endeavours to hide itself by creeping into the depths of some adjacent hole. In the afternoon the whole party again goes several times in search of food, and returns at night to sleep upon the usual perch. According to Bolle, this species is rarely seen in the Canary Islands; and, indeed, many other spots which would appear to offer it a most desirable home, are, most unaccountably, never visited by this shy and unenterprising bird. It is only when we learn upon what food the Chough subsists that we appreciate the full value of its many services; for it lives principally upon insects, grasshoppers, spiders, and, in Spain, it also devours scorpions in large numbers, raising the stones under which such creatures live by the aid of its beak, or digging up the ground in search of them.

The breeding season commences early in spring; the nest, which is often very difficult to find, being placed in holes in the rock, is constructed of dry stalks or hay, well lined with moss: the eggs, four or five in number, are whitish or dirty yellow, marked with dark brown spots and streaks. The female broods alone, but both parents assist in the heavy task of feeding the young, an operation which is carried on amidst an indescribable amount of noise and general confusion. So extremely social are these birds that they remain in company even during the period of incubation. Though, like other Ravens, they have doubtless little respect for property, still, on the whole they live peacefully, even when in large flocks, and courageously assist their companions when in danger. Should one of the party be injured the rest immediately surround it with every indication of sympathy, and we have known a case in which a Chough that had broken its wing was fed by its companions until it could fly about and obtain its own food. When tamed these birds frequently become extremely interesting, and may be allowed to leave the cage, without any danger of their flying away.

THE ALPINE CHOUGH.

The Snow Crow, or Alpine Chough (*Pyrrhocorax alpinus*) possesses a comparatively strong, yellow beak, of about the length of its head, and its plumage more nearly resembles that of a Blackbird than that of a Crow. The attire of the adult is of a rich velvety black, the feet are red. Whilst young the feathers are of a paler tint, and the feet yellow.

In size and habits the Alpine Chough closely resembles the species last described—indeed, it may be regarded as holding the same place among the pinnacles of Alpine ranges as that occupied by the Lark in our corn-fields, or the Seagull on our coasts. Tschudi tells us that two of these birds were seen by Meyer during his ascent of the Finsteraarhorn, at an altitude of more than 13,000 feet above the level of the sea, and they are frequently known to inhabit regions that are entirely uninhabitable by man, or even by the quadrupeds that occasionally are found at very considerable altitudes. Travellers who attempt the most precipitous and apparently desolate passes are astonished to find that they are greeted by a noise which they could never have supposed to have existed amongst the lofty peaks of the solemn and majestic Alps, and soon find themselves beset by swarms of Snow Crows, who scream and quarrel among themselves as they hover over the heads of their unusual visitors, or perch upon a neighbouring pinnacle the better to observe their movements. The utmost severity of the winter will not drive them to seek a home in the country that lies beneath, upon which they, however, occasionally descend in large flocks, making the air resound with hoarse caws, or shrill cries, as they search for berries in the bushes that abound in Alpine valleys. Almost any kind of food is consumed by them with avidity, but they manifest a decided preference for snails of various kinds—indeed, upon one occasion we found no less than thirteen of these destructive molluscs in the crop of a Snow Crow that we had killed: like birds of prey, they will occasionally follow living animals, and devour dead carcases with the greatest eagerness. The author from whom we quote tells us that he has known these birds to rush down from their retreats at the first report of a gun, and join in the pursuit of the intended victim with the utmost excitement, and mentions an instance in which a flock of Alpine

Choughs hovered for months over a precipice, beneath which lay the whitened bones of a hunter who had met his death in pursuit of a chamois, and whose flesh they had eaten. Most noisy are the altercations while these creatures are at their disgusting meals, which are enlivened by a constant succession of vicious attempts to drive their companions from their prey. When devouring the smaller birds or quadrupeds the head is first attacked in order to obtain the brains.

The nest of the Snow Crow is but rarely found, being built in clefts or fissures of the steep rocks in which they live; it is large and flat, and is usually constructed of blades of grass. The eggs, five in number, in size resemble those of the Common Crow; the shell is light grey, marked with spots of a deeper shade. Successive generations often build upon the same place, which in time becomes so thickly covered with the excreta of its numerous occupants as to form beds of guano, which are largely employed as a valuable manure. When domesticated, says Savi, the Snow Crow exhibits great attachment to its owner, and becomes so tame as to fly quite freely about the house. It will consume almost anything eaten by the family, and prefers milk or wine to water. While eating, it seizes the morsel and tears it with the claws before swallowing it, and should the supply prove too large for present need the remainder is carefully put away, and hidden under scraps of paper or any available

THE CHOUGH (*Fregilus graculus*).

covering, its owner keeping a very sharp look-out to prevent the discovery of his concealed treasure. So remarkable is its liking for *fire*, that we might imagine it to be the *Avis incendiaria* of the ancients; it has been known to pluck the burning wick from a lamp and swallow it, or to draw small live coals from the hearth for this purpose, without any apparent ill effect, and so to delight in smoke as to take every opportunity of throwing a scrap of rag, wood, or paper into the grate, for the pleasure of seeing the light clouds ascend as it is consumed by the flames. The affection of this bird for those by whom it is tamed is remarkably demonstrative; it seems to observe their absence, and greets them on their return with every expression of delight; to some persons, on the contrary, it occasionally takes a most unaccountable aversion, and pecks and screams at them whenever they approach. The song of the Snow Crow is varied, and it has been known to whistle a simple air that it had been taught.

The TRUE RAVENS are distinguished by their large but rather short beak, which is more or less curved, and covered at its base with a number of black bristles; the wings are of moderate size, and reach, when closed, to the end of the tail; the feet are powerful, and the plumage a rich black, more or less glossy.

THE RAVEN.

The Raven (*Corax nobilis*), as the principal member of this group is called *par excellence*, is recognisable by its lengthy body, broad, long, and pointed wings, the third quill of which considerably exceeds the rest in length; the tail is of moderate dimensions, and graduated. Its plumage is short, glossy, and uniformly black; the eyes of the old birds are brown, those of the young blueish black, and those of the nestlings pale grey. The length of this species is about two feet, its breadth four and a quarter; the wing measures seventeen inches, and the tail nine and three-quarters.

This Raven is spread over a much larger portion of the world than any of its congeners; it inhabits the whole of Europe, as well as a great part of Asia, and is met with in the countries extending from the Altai Mountains to Japan. It is at present uncertain whether the very large Raven met with in North America is the same or only a similar species. Throughout some parts of Europe these birds dwell comparatively apart from man, preferring to inhabit such localities as mountains, dense forests, or rocky coasts, while others, that frequent the northern, southern, or eastern coasts of our continent, live on comparatively friendly terms with the lord of the soil, from whom their many objectionable habits do not meet with the same retribution as in the more central or western lands. Ravens usually live in pairs, and remain constantly together throughout their lives, passing their time principally in flying in company with each other over the surrounding country. When on the wing, their movements are extremely beautiful, they alternate between a rapid and direct flight, produced by a powerful stroke of the wings, these, like the tail, being kept outspread, and a hovering motion, that takes the form of a series of gracefully described circles, seeming to be produced without the slightest effort on the part of the birds, who occasionally amuse themselves by dropping suddenly to a distance of some feet, and then continuing their way as before. Upon the ground their gait is distinguished by a most absurd assumption of dignity, the upper portion of the body being held considerably raised, whilst they gesticulate with the head in a most laughable attempt to keep time with the movements of the feet. While perched the feathers are generally kept quite close, those only upon the head or neck being spread or ruffled when the creature is under the influence of strong emotion: the wings are always kept slightly raised from the body.

By the rest of its congeners the Raven would seem to be regarded with abhorrence, for they will fall upon and attack it with the utmost animosity; and should it attempt to join a party of other species of its family, they greet it with as noisy demonstrations of terror, as if the intruder were a Hawk or a Buzzard, and compel it at once to retire from amongst them. In its relations with man nothing can exceed the prudence and wariness of the Raven, its fear of molestation being so strong as to compel it even to desert its nestlings should an enemy approach, although its attachment to its offspring is usually both warm and constant. The voice of this bird is varied, and its manner of chattering to its mate during the period of incubation even more peculiar and incessant than that of the Magpie.

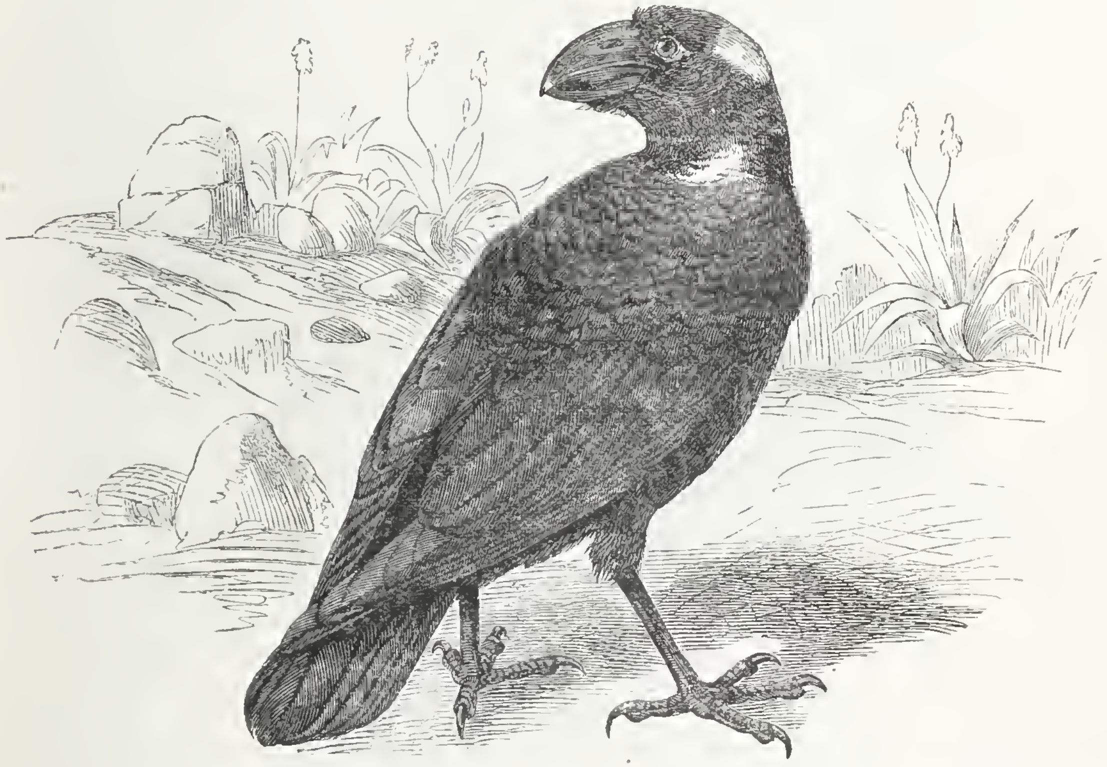
In voracity the Raven has but few equals, for not only will it eat almost all kinds of food, including fruit, corn, and every description of insect, but it will seize upon and devour creatures exceeding itself in size, and attack not only almost any quadruped from a hare to a mouse, but boldly engage the Seagulls in combat, when those birds seem inclined to dispute its right to invade their nests and despoil them of their young. Boldness and cunning, strength and dexterity, all seem to be united in the character of this daring marauder; it will attack domestic fowls, ducks, or young geese, and chase and destroy not only partridges, but hares and pheasants. In some parts of Ireland the Raven may be seen picking up its food in the vicinity of houses in company with dogs and cats, or prowling about on the sea-shore in search of fish. During the spring it destroys numbers of young lambs, or amuses itself by driving Eider Ducks from their nests to devour their eggs, and when it has satiated itself will conceal those that remain beneath the sand; even horses are not free from the attacks of these birds, which will settle upon the back of any wounded or suffering animal, and can only be dislodged after long and violent efforts. Eagles they do not venture to contend with, but follow in their wake in the hope of obtaining the remnants of their prey; in short, nothing that can be overcome by their strength, craft, or audacity is spared; they will even, it is said, devour the aged or nestlings belonging to their own species. We are assured that mussels form a part of the Raven's diet, the bird having first carried them into the air, and let them fall from a considerable height, to break their shells upon the rocks or stones beneath; they will also eat the hermit crab, which is obtained by rapping its shell until the unsuspecting creature creeps out to ascertain the cause of the disturbance. Despite the cruel and rapacious disposition of these birds, their deeds are not always deeds of evil; on the contrary, great and valuable are some of the services they often render to man, insomuch that by some nations they are regarded with the utmost favour—the Arabs, indeed, look upon them with such superstitious reverence as to imagine them to be immortal, and in Greenland and Iceland they are allowed to run tame about the houses. On the other hand, in the Canary Islands they are held in the utmost detestation by the shepherds, who maintain that they constantly peck out the eyes of young goats and lambs, and on this account wage an exterminating war against them.

The eyrie of the Raven is generally situated in the hole of a rock, or the summit of a high and inaccessible tree; it is usually about one foot deep, and from two to three feet wide; the exterior is formed of small branches, lined with a layer of twigs, and the interior, which is about nine inches in diameter, and four or five inches in depth, bedded with wool, fine grass, and similar materials, the utmost caution being employed by these birds, both when seeking materials and when building the large and strong cradle which year after year is resorted to for the purposes of incubation. The eggs, usually four or five in number, are large, and of a green colour, marked with brown and grey spots. Ravens are by no means deficient in care for their young, and labour incessantly to satisfy their ever-craving beaks with all kinds of animal food; should fear compel them to quit their charge, they perch as near the little family as safety will permit, and testify by plaintive cries and anxious flutterings their desire to return to their brood. When fully fledged, the young do not entirely leave the nest, but return every evening for some weeks, in order to pass the night in the snug warmth that it affords them, and perhaps to receive instruction during the day, as to the means to be employed in obtaining food; they probably leave their protectors only when the autumn approaches. When tamed the

Raven may be taught to speak with facility. It will likewise imitate a great variety of sounds, and those who can overlook its thievish propensities and tiresome habits will often derive considerable pleasure from watching its amusing tricks, and cultivating its really high capacities.

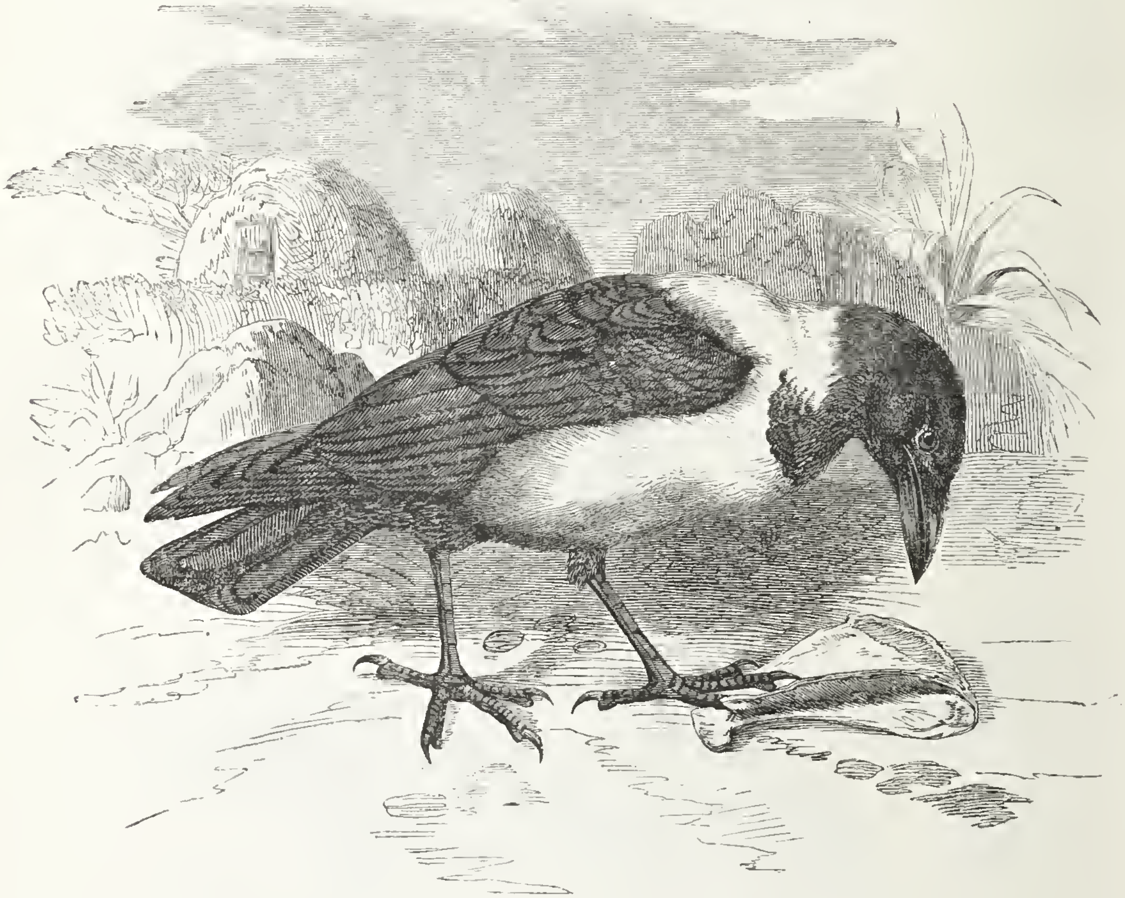
The VULTURE RAVENS (*Corvultur*), as two African members of this group have been called, are birds exceeding the Common Raven in rapacity as well as in size. Both these species have unusually thick beaks, compressed at their sides, the upper mandible being so decidedly bent as closely to resemble that of a Vulture; the third and fourth quills are longer than the rest; the tail is rather large, and slightly graduated.

The WHITE-NECKED VULTURE RAVEN (*Corvultur albicollis*) and the THICK-BILLED VULTURE RAVEN (*Corvultur crassirostris*), the former a native of the Cape of Good Hope, and the latter an inhabitant of Abyssinia, are much alike in their general appearance; both are of a glossy coal black, except upon the nape, which is white. In the Abyssinian species the sides of the neck gleam with a rich purple, and the rest of the coat is lighted up with a blue refulgence; the small feathers upon the wing-covers near the shoulder are a mixture of chestnut and black; and the white marks upon the nape extend upwards till they reach the top of the head; the eye is reddish brown, the feet and beak black, the latter being tipped with white. The length of this species is about three feet two inches, the length of wing one foot five inches, and of the tail nine inches. According to Rüppell, this bird inhabits the Abyssinian highlands, and is often found at an altitude of 5,000 feet above the level of the sea. Le Vaillant tells us that the Vulture Raven is voracious, daring, extremely noisy, and very filthy in its habits, subsists principally upon carrion, and destroys large numbers of sheep and gazelles, tearing out their eyes and tongue and then devouring them. Were it possible, it would readily



THE WHITE-NECKED VULTURE RAVEN (*Corvultur albicollis*).

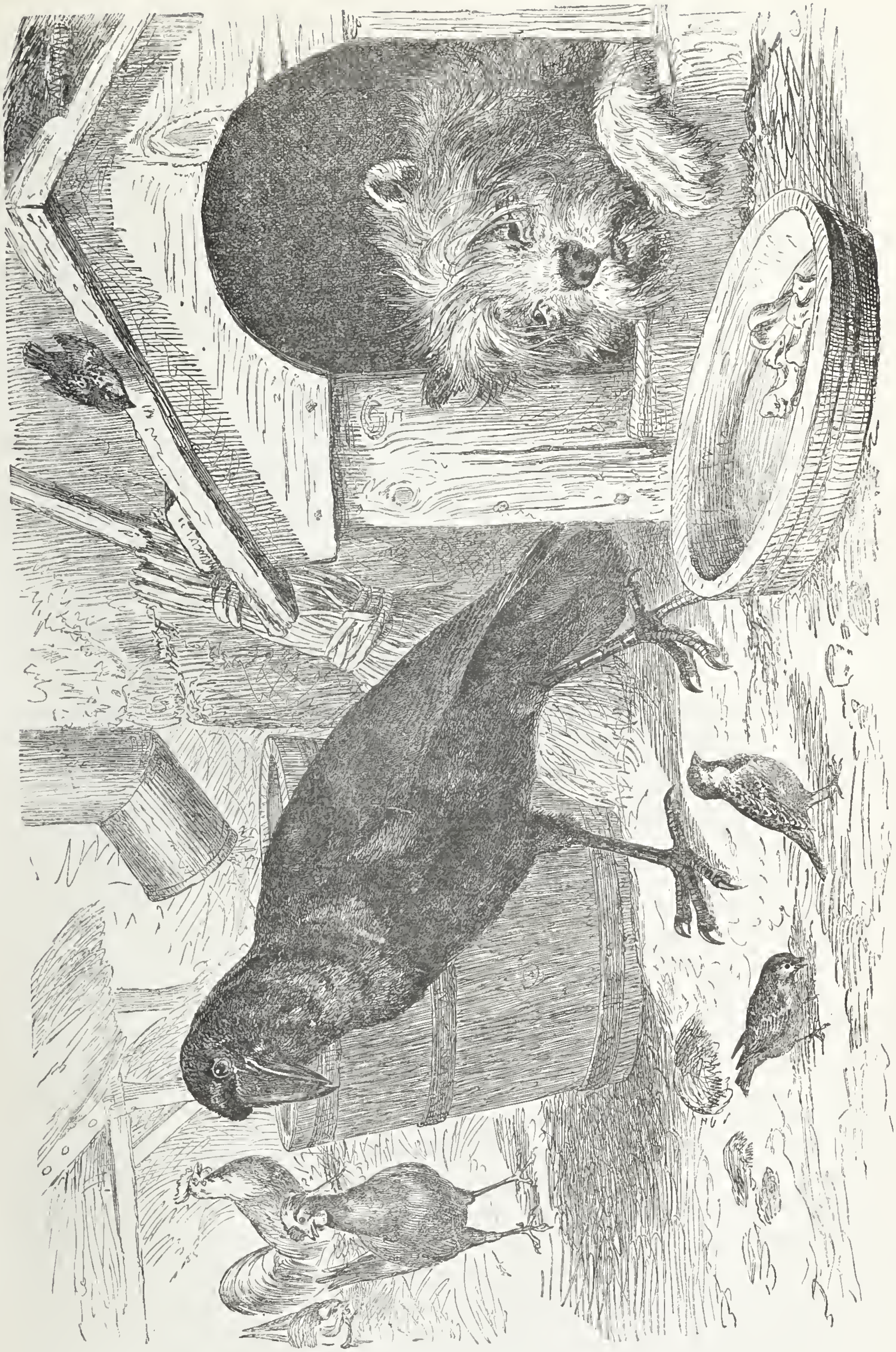
contend with buffaloes, elephants, cattle, or horses, but is compelled to rest content with following them and relieving such as are tormented with various parasites to which they are liable, the poor creatures often allowing the Vulture Raven to peck their hides till the blood flows rather than endure the perpetual irritation from which they suffer so severely. The nest of the Vulture Raven is built in October, and placed upon the branches of a tree; it is formed of twigs, lined with some soft material. The four eggs of which a brood is composed are green, spotted with brown. This species never migrates, but remains from one year's end to another near the same locality; occasionally it associates with its congeners, but never partakes of the food on which they subsist.



THE SCAPULATED RAVEN (*Pterocorax scapulatus*).

THE SCAPULATED RAVEN.

The SCAPULATED RAVEN (*Pterocorax scapulatus*) is a small species inhabiting Africa from eighteen degrees north latitude, distinguished by its peculiar plumage and moderate sized beak. The feathers are of a rich glossy black, except upon the upper part of the breast, which is of a dazzling white, as is also a broad patch over the scapular region; these lighter portions gleam like satin, and the deeper tints are brightened by a metallic lustre; the eye is light brown, the beak and feet black. The length of this bird is about eighteen inches, the wing measures thirteen inches, and the tail six inches. Throughout the whole of Soudan and the lower parts of Abyssinia the Scapulated Raven is found living in pairs, which rarely assemble in small parties, and appear to avoid mountain districts. In its general appearance this species is not unlike the Magpie; its flight is light, rapid, and hovering, and as it rises in the air with pointed wings and rounded tail fully displayed, after the



THE RAVEN (*Corax nob'ilis*).

manner of a Falcon, its elegance cannot fail to please the eye of the beholder, who may trace its course for a considerable distance as its snowy breast sparkles and gleams in the direct rays of the sun. When upon the ground its gait is very easy and dignified; its voice resembles that of the Raven. Wherever these birds make their abode they are soon on excellent terms with the human inhabitants, and rarely exhibit any fear of man, except when entirely unaccustomed to his appearance; they are regular visitors to some of the villages upon the coast, and will sometimes perch upon the straw huts of the natives. The eyrie of the Scapulated Raven is usually placed upon a tree. The eggs, four or five in number, are laid during the first month of the rainy season; in appearance they resemble those of the rest of the family. The parents are much attached to their young, and will dart like Falcons upon any stranger who may approach the nest. These birds are disliked by the natives, on account of their unclean habits, and their flesh is never employed as food.

THE CARRION CROW (*Corvus corona*)

The CROWS (*Corvus*) are distinguished from the Ravens by the comparative smallness of their beaks, by their rounded tails, and their lax and dull plumage. Two species are common in Europe—

THE CARRION CROW AND THE HOODED CROW.

The Carrion Crow (*Corvus corona*) and the Hooded Crow (*Corvus cornix*), are so alike in size and general formation, that if they were denuded of feathers it would be difficult to distinguish between them. They will frequently pair together, and both have been the subject of endless disputes as to whether they are slight varieties of the same species, or quite distinct from each other.

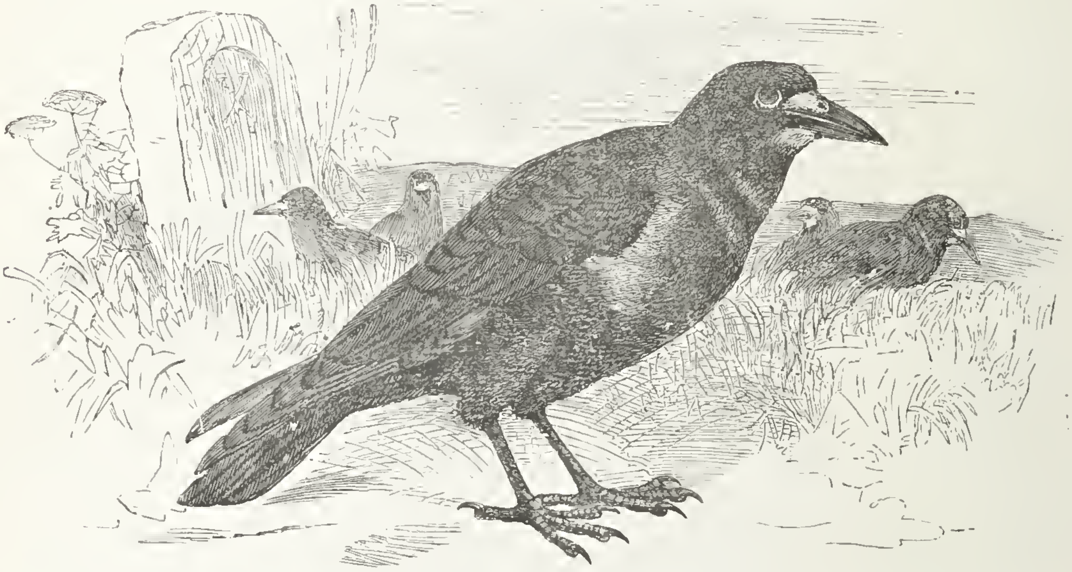
The Carrion Crow is entirely black, with a violet or purple lustre on its feathers, and brown eyes. The young are pale black, and their eyes grey. The plumage of the Hooded Crow, on the contrary, is only black upon the head, front of throat, wings, and tail; the rest of the body is ash colour. The young are of a dirty deep grey. The length of both these birds is from eighteen to nineteen inches, their breadth is from thirty-eight to forty inches, the wing measures from twelve and a half to thirteen inches, and the tail seven to eight inches. These two species usually pass their lives in one limited district, or only leave their native haunts to make short excursions into the surrounding country. Wooded pastures are their favourite resorts, such situations being preferred as are in the immediate neighbourhood of man, whose orchards they are fond of visiting, though forests or even thick woods seem to be avoided by these social and intelligent creatures. Their senses are highly and equally developed; their sight, smell, and hearing are remarkably perfect, and their movements both in the air and upon the ground are light and rapid. Like the Raven, they render immense service to mankind by clearing great numbers of noxious insects from the fields and gardens; and though, like that bird, they attack wounded animals, or such as are smaller than themselves, and frequently rob nests of their contents, their troublesome propensities are far outweighed by the benefits they confer. At the first dawn of day they congregate in large numbers upon some tree or building preparatory to going in search of food, and from thence they wing their flight over the neighbouring fields and gardens in company with many of their congeners, examining every nook or furrow in search of their insect fare, robbing nests of their eggs, or pouncing upon mice as they run from their holes; so courageous are they that nobler birds of prey are often disappointed of their victims by the efforts of these comparatively feeble interlopers, who will pursue and dash round the tyrants of the air in such numbers and with so much energy as to compel them to relinquish their prey and retire from the field. At noon the parties of Crows retire to the pleasant shelter of some thickly-foliaged tree, there to sleep away the mid-day heat, going again in search of food during the afternoon, and re-assembling towards evening on their favourite perch to chatter to each other, and (apparently) discuss the events of the day in a manner with which all are familiar. The night is passed in some retired group of trees, the birds only taking possession of their roosting-place after it has been cautiously examined by several of their party, and entering it with so much wariness that no sound is audible beyond the soft fluttering of their wings. The period of incubation commences about February or March, and during this time the attachment of the male bird to its mate seems redoubled; his whole time appears to be occupied in rendering himself attractive in her eyes. The eyrie, which is built at the summit of a lofty tree, is not more than four inches deep, and is constructed of dry twigs, roots, or couch-grass, the interior being lined with wool, feathers, bristles, hair, or even with bits of rag. The nests are usually about two feet broad, and old nests are often repaired for the reception of the brood. The eggs, three to five, and occasionally six in number, are laid in April, and in colour are blueish green, marked with olive green, dark grey, or black spots and streaks. The female broods alone, but receives the most unremitting attention from her mate, who only quits her when compelled to go in search of food; both assist in the nourishment and care of their young, who are protected and defended from their numerous enemies with the utmost courage and devotion.

As we have already said, it is by no means uncommon for the Carrion Crow and the Hooded Crow to pair with each other; in such cases the plumage of the offspring combines the hues of both parents, and should these hybrid birds mate among themselves, their young, strangely enough, will often appear in the perfect plumage of one or other of the pure breed from which they are descended. Both species will live for a long time in confinement, but though capable of learning to imitate the human voice, they possess so many disagreeable tricks as to render their training a work of much labour and but little enjoyment; their bodies have an odour that makes it impossible to keep them in a dwelling room, and if permitted to run at large about the yard or garden they become so troublesome by their thievish propensities, and love of every bright or glittering object they may see, as to cause them to be regarded with little favour by their owners. Many are the enemies against which these birds have to contend, but none of them is so formidable an antagonist as the Horned

Owl, whose attacks are the more fatal from the circumstance that they always occur during the night, and thus render the possibility of eluding them almost hopeless; the Crows, however, take every opportunity of avenging themselves during the day, and fall upon their dreaded foe with the utmost ferocity; indeed, so strong is the hatred with which they regard their arch-enemy that those engaged in Crow shooting often fasten an owl immediately in front of the small huts under which they lie concealed, and fire upon the flocks of Crows as they come down in furious crowds to mob and worry their helpless persecutor.

THE ROOK.

The Rook, or Field Crow (*Corvus frugilegus*, or *Frugilegus segetum*), is a most useful species, inhabiting all the plains of the south of Europe and the southern portion of Siberia, even as far as Afghanistan and Cashmere. These birds are distinguished by their slim appearance, the decided elongation of their beaks, their long wings, abruptly rounded tails, close, glossy plumage, and by the bareness of the face observable in the old birds, occasioned, probably, by continually rubbing it upon the ground when in search of food. Their length is from about eighteen to nineteen inches, the breadth thirty-seven to thirty-nine inches, the wing measures thirteen to fourteen inches, and the tail ten and a half inches. The plumage of the adults of both sexes is an uniform purplish black, and that of the young birds pale black; the faces of the latter are covered with feathers. Unlike the members of the family described above, the Rooks migrate regularly, and in enormous swarms, towards Southern Europe and the north of Africa, everywhere preferring well-wooded and fruitful plains, and never settling upon mountains except whilst occupied in journeying from one country to another. Like their congeners, they assemble in flocks, usually choosing a clump of trees as a gathering point, from which they fly over the neighbourhood, and upon these they build their nests. In their habits they are more social than other Crows, freely associating with birds that are weaker than themselves, but exhibiting such fear of the Raven that they will vacate a favourite resort on its first appearance, even although they may be so attached to the locality as to refuse to quit it when men attempt to drive them from the spot. In bodily endowments and intelligence they are inferior to none of their family, but are far more timid and harmless in their disposition.



THE ROOK (*Corvus frugilegus*).

Their voice is deep and hoarse, and though they are capable of imitating sounds, they never attain the power of pronouncing words. In spite of the comparative amiability of disposition exhibited by the Rooks, they render themselves extremely troublesome in a variety of ways, almost deafening their hearers by their incessant cawing, and frequently doing considerable mischief by stealing fruit from the gardens or seed from the fields, and even giving proof of still more voracious propensities by strangling young hares or partridges. For the most part, however, the food of this species consists of cockchafers and their destructive larvæ or slugs; whilst in pursuit of these, their acute sense of smell would seem to guide them to the exact spot under which they lie concealed, and so enormous are the numbers they dig up, that, as we have said, the hungry Rooks actually rub the feathers from their faces by constantly burrowing in the ground with their beaks. In the breeding season, numerous pairs build close together, quarrelling the whole time, and robbing each other incessantly of the materials collected. The female alone broods upon the eggs, which are usually four or five in number, of a pale green, spotted with dark brown. During the time of incubation comparative peace reigns in the colony; but no sooner are the nestlings hatched than the uproar is redoubled tenfold, as the hungry little ones clamour for food in most discordant tones from daybreak till the sun goes down.

THE JACKDAW (*Monedula turrium*).

Large numbers of Rooks are destroyed during their migrations, which are made in flocks of incredible magnitude; whilst flying in this manner from place to place they may sometimes be seen to delay their course for half an hour at a time, merely to enjoy the pleasure of hovering or performing a variety of evolutions on the wing, descending somewhat in their flight as they pass over mountains, and soaring high into the air when about to cross lowland districts; sometimes, as though again wishing to alight, they plunge directly earthwards, falling like a lifeless mass from two hundred feet above the ground, and then fly gently onwards for a short distance before again ascending to continue their journey. In the southern part of Europe, and in the north of Africa, the flocks are seldom met with of the enormous size above described, as before reaching so great a distance these large bodies have separated, and gone to spread themselves in less destructive numbers over the countries they select as winter quarters; despite this precaution, thousands perish from starvation, and we ourselves have seen hundreds covering the ground near Suez, the weary travellers not having found the food which they had come so far to seek.

THE JACKDAW.

The Jackdaw (*Monedula turrium*) is a very small species of Raven, distinguished from its congeners by its short, strong, straight beak, which is but slightly curved. The length of this bird does not exceed twelve inches, or twelve and three-quarters, its breadth is from twenty-four to twenty-five inches, the wing measures eight and a half inches, and the tail five inches. The plumage is deep black upon the forehead and top of the head, the back of the head and nape being dark grey; the upper part of the body is blue black, and the lower portions slate colour or pale black. The young are recognisable by their lighter tints and the grey colour of the eye. The Jackdaw is found throughout most of the countries of Europe and in many parts of Asia, occupying some places in large numbers, and entirely avoiding other districts with a fastidiousness for which we are unable to account: steeples, towers, or old buildings are the situations it prefers for building purposes, but it will also make its nests upon high trees or even shrubs. The disposition of this species is lively and its habits extremely social; indeed, it may be said to possess the gifts of the Crow, with but few of its disagreeable qualities. When upon the wing the flight of the Jackdaw is not unlike that of a Pigeon, and its mode of rising, falling, or performing a variety of evolutions remarkably graceful and easy. Its voice is capable of considerable development, and, like many other members of this family, it has but little difficulty in imitating human speech and other sounds; it chatters almost incessantly during the breeding season, but not offensively, for its tones are soft and very varied. Large quantities of insects, snails, and worms are devoured by these useful birds: they will seek their food in the streets or follow in the wake of the ploughman as he turns up the clods and lays the concealed grubs bare to their hungry beaks; they hunt for mice, young birds, and eggs with great dexterity, and will also feed upon roots, leaves, corn, and fruit.

Late in the autumn the Jackdaws leave us for warmer regions in company with the Rook, though but rarely journeying as far as that bird. The spring is usually far advanced before they return to their native haunts and commence their work of building or repairing their nests, which are extremely rude, being roughly formed of twigs or straw, and lined with hair, feathers, or hay. During these building operations the settlement is a constant scene of quarrelling, one bird stealing from another with the greatest audacity and cunning, and taking possession not only of the materials but of the places selected by their neighbours as snug and desirable localities. The young are fed upon insects and tended with great affection by their parents, who will also defend them from an enemy with much courage. Should an Owl or Buzzard venture to approach the colony, it is received with loud cries and immediately driven off by the infuriated Jackdaws, who often pursue the intruder to the distance of some miles. Cats, Martens, Falcons, and Hawks are numbered amongst the most formidable of the enemies with which they have often to contend; the two first of these marauders plundering their nests, while the latter attack both old and young birds. Of all the members of the family, none are so well fitted for domestication; large numbers are caught annually for this purpose, as their great intelligence and pleasing disposition render them favourites with all lovers of the feathered tribes.

THE GLOSSY CROW.

The Glossy Crow (*Anomalocorax splendens*) is an inhabitant of the East Indies, and one of the most elegant of the many representatives of the family met with in that part of the world. In this bird the wings are so short as scarcely to reach the end of the long tail, and it has for this reason been classed as forming a distinct subdivision of the group to which it belongs. The length of the Glossy Crow is from fifteen to eighteen inches, seven inches of which are included in the tail; and the wing measures about eleven inches. The plumage upon the front of the head is a brilliant black, the back of the head, nape, and upper part of the throat are lively grey; the back, wings, and tail black, lighted up by a rich violet tint like tempered steel; the chin, breast, and sides of the neck are black, with a metallic lustre; the breast is dark grey, and the middle of the belly a dusky black, lightly marked with steel blue.

Jerdon tells us that the name given to this species has been entirely misapplied, as many of its congeners rival it in the brilliant gloss upon their coats. Every part of India affords a home to this beautiful bird, which is met with in all the towns and villages from Ceylon to the Himalaya Mountains, living upon the most friendly terms with man during the day, and passing the night in company with not merely its own kind, but with large parties of Parrots and Minas, amongst whom, as may be easily imagined, disputes and fights are of constant occurrence, and anything like quiet or harmony impossible. At dawn the whole party are awake, and at once commence their preparations for the business of the day by carefully preening their feathers, chattering with the utmost vivacity among themselves. The flock then divides into small parties of from twenty to forty birds, and fly over the surrounding country often to a distance of ten miles from the place where they slept. It may literally be said of the Glossy Crows that they live upon the crumbs that fall from man's table, for many of the natives take their meals outside their huts, and at such times are generally surrounded by these birds, who seize every morsel as it drops; indeed, so well do they understand what the lighting of a fire indicates, that the first appearance of smoke will attract them, and keep them hovering about the spot until the expected food is ready to be eaten. Others, again, will seek for crabs, fish, frogs, or insects, which they consume in large quantities, or follow Gulls and Sea Swallows in order to share their prey; some will search the fields for grubs, or relieve the cattle from the parasites by which they are tormented; others spend the day in robbing the banana-trees of their fruit, or hunt the winged Termites in company with Bee-eaters, Kites, or even Bats. During the heat of the summer they may be seen sheltering themselves under some thickly-foliaged branch from the power of the sun, and with beak wide open, seem to pant for a breath of cool fresh air. The breeding season extends from April to June; and the nests, which are placed upon trees or the corners of a house, are formed of twigs, lined with a bed of some soft material. The brood consists of four greenish-blue eggs (spotted and marked with brown), this number being frequently increased by the addition of a Cuckoo's egg, that bird seeming to have a decided preference for their nests when in search of a home for her offspring.

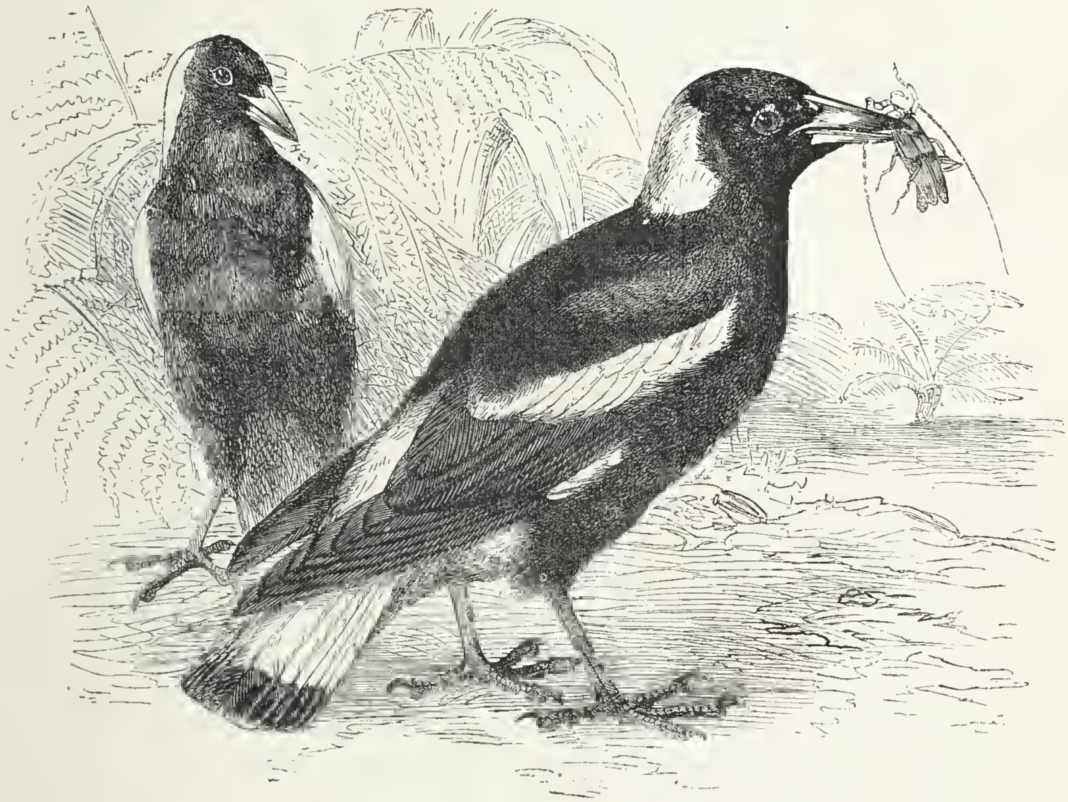
The flight of these Crows is light and tolerably rapid. When pursued by an enemy they are very dexterous in eluding its attacks—indeed, their courage, intelligence, and cunning are so highly developed as to render them most interesting. Blyth tells us that they disport themselves about the houses with great confidence, running hither and thither in a constant bustle, as though each moment was of value and could not be wasted in idle loitering, at the same time uttering their cry, which is unbearably noisy. The inhabitants of Ceylon observe these birds with great attention, and have many superstitions based upon the course of their flight, the kind of trees on which they settle, or the numbers in which they appear—indeed, the proceedings of the Glossy Crow would seem to be regarded with the same attention and anxiety as was the flight of ominous birds amongst the Greeks and Romans. The Dutch, during the time that they possessed Ceylon, also showed considerable favour to this species, and decreed heavy punishments for those who killed them, believing them of great service in promoting the growth of cinnamon by devouring the ripe fruit and scattering the undigested seeds over the surrounding country.

THE NUTCRACKER (*Nucifraga caryocatactes*).

Endless are the annoyances to which the inhabitants of Ceylon are exposed by the thievish propensities of these daring pilferers, who will watch the windows of the houses, to steal every article that it is in their power to remove, and not unfrequently open packets, or even unknot a cloth, if they fancy that anything eatable is contained within its folds. On one occasion a party of people seated in a garden were much startled by the sudden appearance of a clasp-knife covered with blood, which fell amongst them as if coming from the clouds, and, on instituting inquiries, at last ascertained that the formidable missile had been stolen from the cook, who, in an unlucky moment, had turned his head aside, and thus given one of these expert thieves the opportunity for which it was waiting. A still more amusing anecdote is told by Tennent of a Glossy Crow, who, having long attempted by every conceivable device to divert the attention of a dog from a bone that it wished to secure, and its efforts proving fruitless, retired in search of a friend, who at once perched upon a tree, and endeavoured to attract the attention of the dog, but all in vain; at length, rendered desperate by repeated failures, the new comer darted down with great violence upon the owner of the coveted bone; the dog, to revenge itself, sprang upon the intruder, while the cunning instigator of the commotion crept quietly to the spot, and secured the prize.

THE NUTCRACKER.

The Nutcracker (*Nucifraga caryocatactes*) belongs to a group of Ravens met with in most various and distant parts of the globe, some of its members inhabiting the whole of the north of Europe and a large portion of Asia, while others are found both in America and on the Himalaya Mountains. The body of this bird is slender, the neck long, the head large and flat, with a long, slender, and rounded beak, the upper mandible being straight, or only very slightly curved. The wings are of moderate size, blunt, and graduated, the fourth quill being longer than the rest; the tail is short, and rounded at its extremity; the feet are strong, and furnished with powerful toes, armed with strong hooked claws. The plumage is thick and soft; its predominating colour is a dark brown, without spots upon the top of the head and nape, although elsewhere each individual feather is tipped with an oval mark of a pure white; the wings and tail-feathers are of a brilliant black, the latter being tipped with white at their extremities; the under tail-covers are likewise white; the legs are brown, and the beak and feet black. It is from thirteen to fourteen inches long, and from twenty-two to twenty-three and a half inches broad; the tail measures about five inches.



THE FLUTE BIRD (*Gymnorhina tibicen*).

This species frequents thickly-wooded mountains, and the wide-spread forests of Northern Europe and Asia, showing a decided preference for districts covered with Siberian pines, and may be met with in considerable numbers in certain localities, while in others, in the immediate vicinity, it will be entirely wanting: in Sweden it is exceedingly common, but is seldom seen in Norway. In appearance the Nutcracker is awkward and clumsy, but in reality it is extremely active and adroit, walking upon the ground with ease, and climbing, or suspending itself from the branches with the dexterity of a Titmouse; its flight is light but slow, and is produced by powerful strokes and broad extensions of the wings. The voice is a loud, screeching, resounding cry, and though most of its senses appear to be very equally developed, its intelligence will not bear comparison with that of most other members of the family.

But little is known about the habits of these birds during the breeding season, for their nests are usually built in the inmost recesses of some thicket almost inaccessible to man. March, we are told, is the month in which they lay their eggs, and, if this be the case, they must in many places undertake the cares of a family whilst snow still lies deep upon the ground. The nest, as we learn from Schütt, is neatly formed of dried fir twigs, woven together with the green leaves of the same tree, probably for the purpose of decorating the exterior; it is lined with a layer of moss or young bark, beautifully worked in, which gives a round and finished appearance to the interior. The eggs are pale blueish green, marked here and there with light brown spots. Like other Ravens, the Nutcracker subsists principally upon insects, seeds, and fruit, but displays many of the propensities of birds of prey; it attacks a great variety of animals weaker than itself, and after biting them in the neck, breaks open their head and devours the brains. We have heard of an instance in which one of these birds ate a squirrel that was laid before it. Hard nuts are among the favourite articles of their food, and it is most curious to see them seize one in their claws and dexterously crack it, always keeping the broad end carefully uppermost during the process: in this manner they will rapidly dispose of a large supply.

The PIPING CROWS (*Phonygamæ*) are short-tailed Ravens, with very long conical beaks; the upper mandible is hooked, and armed with teeth-like appendages near the tip; the wings are pointed, and the tail slightly rounded. These birds are distinguished from the rest of their family by many peculiarities; they live much upon the ground, and, though they do not avoid dry parts of the country, prefer marshy districts near the sea-coast. Upon the ground their movements are remarkably active, and they exhibit considerable agility among the branches of trees, but their powers of flight are very inferior to those possessed by their congeners, and, unlike them, they never mount into the air or perform any remarkable evolutions. They feed upon insects of all kinds, but more especially upon locusts and grasshoppers, and sometimes rob nests of other birds to devour the eggs and young; they will also eat seeds, fruit, or corn in such quantities as to render them extremely troublesome to the settlers. We learn from Gould that the Piping Crows lend a great charm to the places they frequent, as they hop nimbly and gracefully about, uttering their clear flute-like cry, which is constantly heard when they are resting on the trees in small parties of from four to six birds. The nests are formed of twigs, lined with grass or other suitable material, and resemble those built by European Crows. The brood consists of from three to four eggs; the young are fed by both parents, who display great courage in defence of their little family; their growth is rapid, and, after the first moulting, they acquire the same plumage as the adults. As an example of this musical race we may select

THE FLUTE BIRD.

The FLUTE BIRD (*Gymnorhina tibicen*) is a species of Crow, about sixteen and a half inches in length. Its plumage is principally black, but the nape, lower part of the back, lower tail-covers, and the undermost row of the upper wing-covers are white; the eyes are reddish brown, the beak brownish grey, and the feet black. According to Gould, these birds are very numerous in New South Wales, where they form a most attractive feature in the fields and gardens, enlivening the landscape with their variegated plumage, and delighting the ear with their peculiar tones as they pour forth their song of greeting to the rising sun. They seem to prefer clear open country, planted with groups of trees, as their usual residence, and for this reason they are but seldom seen upon the coast. Their food consists principally of grasshoppers, which they devour in enormous quantities. The period of incubation, in accordance with the inverted seasons of the southern hemisphere, commences in August, and lasts until January, each pair breeding twice in the year: the nest is round and open, formed of twigs, and lined with some softer material. The eggs of the Flute Bird are unknown, but Gould describes those of a very similar species, which he tells us are of a dirty blueish white, often shaded with green, and marked with zig-zag brown streaks of various shades. When in confinement these birds are extremely violent and revengeful; should anything annoy them they will erect their feathers and spread their wings and tail after the fashion of a Game-cock, and are so quarrelsome that they frequently engage in furious combats with much larger birds. Some species are eminently distinguished by the flexibility of their voice, and all are capable of imitating any tunes they may happen to hear.

The BELL MAGPIES (*Strepera*) differ from the Flute Birds in the formation of their beaks, which are much longer, slenderer, and more delicately arched; the upper mandible is armed with a powerful hook at the tip, and furnished with conspicuous teeth on its margins.

THE BELL BIRD OR BELL MAGPIE.

The BELL BIRD (*Strepera graculina*) is of a beautiful blue black; the roots of the primary wing-quills, from the fourth to the eighth, the tip of the tail, and the lower tail-covers, are white, thus giving their plumage the effect of being piebald, the tail appearing entirely white, with the exception of a regular patch of black across its terminal margin; the eyes are of a beautiful yellow, the beak and legs black. In length this species does not exceed seventeen inches. The Bell Bird, like the Flute Bird, is an inhabitant of New South Wales, where it is distributed widely over the face of the country, occasionally appearing upon the coast, but preferring, at least during the breeding season, well watered valleys, abounding in trees; in such localities it also finds its principal supply of food, which consists of berries, fruits, and seeds. When either upon the ground or amongst the branches, these birds are usually seen in very small parties, and but rarely in pairs or large flocks: they live principally in trees, and, though quite at their ease upon the ground, seldom come down to disport themselves upon its surface. Their flight is quite unlike that of our Crows; when in the air their movements are extremely sweeping and majestic, but cannot be sustained for any length of time. Whilst on the wing they utter a most peculiar resounding cry, from which they derive their name. The nest is large, round, and very open, formed of twigs and lined with moss and grass. With the appearance of the three or four eggs that constitute their brood, we are entirely unacquainted. The settlers of New South Wales hunt the Bell Magpie, as they do the Flute Bird, on account of its flesh, which is regarded as a great delicacy. Very few of this species have as yet reached Europe alive.

THE BALD-HEADED CROW.

The BALD-HEADED CROW (*Picathartes gymnocephalus*) is an extremely peculiar and very rare member of this family, inhabiting Sierra Leone, and we believe entirely confined to that country, but we cannot speak with any certainty on this point, as naturalists are still quite unacquainted with its habits. This species would seem to form a connecting link between the Ravens and the Vultures, birds between which there is usually but little similarity. The beak of the Bald-headed Crow is comparatively weak, but slightly curved, and covered at its base with a cere in place of the bristles that are generally so characteristic of the Raven tribe. The wings are powerful and rounded, the tail long and graduated, and the feet high and furnished with strong toes. The head is entirely bare, and the throat, like that of the Vulture, overspread with bristly or down-like feathers. The plumage is of a brownish grey above and white beneath; the wings and tail are reddish brown, the bare or sparingly covered neck red, the beak black, and the feet yellow. According to Gray, this bird is about fifteen inches long, the wing measures rather more than six inches, and the tail six inches and ten lines.

The TREE CROWS, or JAYS (*Garruli*), are distinguished from the Ravens by their blunt short beaks, with or without a hook at the extremity, their weak feet and very short rounded wings, long graduated tails, and rich variegated plumage, which is generally very soft and flocculent. Unlike the members of the preceding family, the various species of Jays pass the greater part of the day in flying from tree to tree in their favourite woods, seldom coming to the ground, and still more rarely congregating in large flocks. Owing to the comparative shortness of their wings, their flight is unsteady, and they are therefore incapable of attaining to any considerable height, or of hovering in or whirling through the air; still more inelegant is their mode of progression on the ground, it being nothing more than a ludicrous attempt at a hop: upon the trees, however, they are quite at their ease, and some even exhibit unusual facility in climbing. In the perfection of their senses they are in no way inferior to the family above described, but their intelligence is not nearly so great, and they must be rather considered sly than clever; indeed, in many points they resemble the Shrike, possessing all the murderous cruelty and rapacity of that bird, without any of the courage and boldness that seem to palliate the atrocities committed by Ravens. They will mercilessly destroy and plunder the nests of other birds, and eat almost any animal or vegetable food, frequently doing great damage by their raids upon orchards, fields, and gardens, thus bringing down upon themselves the vengeance of man. In their habits during the period of incubation they also differ widely from the preceding family, inasmuch as they never build associated together in large numbers, but quite apart from each other; their nests, moreover, are small, and the brood is usually composed of from five to seven eggs. When tamed, some of them are capable of imitating words, and of learning to whistle tunes, but they are extremely troublesome, owing to the numberless petty thefts and annoying tricks in which they delight.

We shall divide the Tree Crows or Jays into several groups, all more or less recognisable by the following characters:—Their bodies are slender, their Raven-like beaks are as long as the head, nearly straight, and provided at the base with a cere, instead of bristly feathers; the wings are short, and their third and fourth quills longer than the rest; the tail, which is composed of twelve feathers, is either very long and wedge-shaped, or of moderate length and rounded at the extremity. The lax and soft plumage frequently becomes flowing towards the head, thus forming a kind of crest, and is usually bright in its coloration.

THE MAGPIE.

The MAGPIE (*Pica caudata*) stands first upon our list, as being familiar to us all, and also because it presents many characteristics that associate it with the family of Ravens—indeed, it might almost be described as a Crow with a long tail, though its beak is shorter and more curved, the wings shorter and more rounded, the tarsi higher, and the plumage softer and thicker than in that bird. The lower part of the breast and the feathers upon the shoulders are white, and the rest of the coat black, with a rich and varied lustre upon its surface. The eyes are brown, the beak and feet black. This species is about one foot six inches long, its breadth one foot ten inches; the wing measures seven inches, and the tail ten inches.

The Magpie is met with throughout the whole extent of Europe, in Thibet, Northern Asia, and North Africa: in North America it is represented by a very similar bird: but the distribution of the Magpies is very unequal; some districts it seems carefully to avoid, and yet in a neighbouring province it may be found in large numbers. It seldom visits mountains, open plains, or thick forests, but usually inhabits lightly wooded parts of the country, such localities being preferred as are frequented by man, in whom it shows the utmost confidence. In Scandinavia, where it is regarded with the greatest favour, it seeks its food in farmyards or the courts that surround the houses, and builds beneath the roofs. It is always stationary, and never wanders to any great distance from its abode, except during the winter, invariably returning to its old haunts. The movements of the Magpie differ in many respects from those of the Ravens; its gait is similar, but the tail is borne aloft, to act as a kind of balance to the body of the bird; its flight is heavy, being effected by sweeping strokes of the wing, and should the wind be at all high is very unsteady—indeed, as a rule, it never flies, except when compelled to do so in going from one tree to another. As regards its intelligence, and the development of its senses, the Magpie will bear comparison with any of its kindred. In its

THE MAGPIE (*Pica caudata*).

intercourse with man it seems easily to distinguish between friends and enemies; towards the latter it shows itself bold, and sometimes cruel; but in its relations with its fellows it is extremely social. Its voice is harsh and monotonous. Magpies will occasionally congregate with other species in flocks of moderate size, though they more generally live in small parties; during the breeding season the conferences held between them are extremely amusing, and the sounds they produce much varied in expression, the assembly chattering with such noise and earnestness as to have given rise to sundry popular proverbs.

These birds live upon insects of all kinds, as well as fruit, seeds, and berries; they do incalculable mischief in the fields, and destroy great numbers of eggs during the spring—indeed, their murderous propensities would almost bear comparison with those of the Falcon, for they will not only attack small birds, but occasionally fall upon fowls, ducklings, or pheasants so suddenly that their victims are quite unprepared to act on the defensive. In Norway it is popularly supposed that the Magpie begins its nest on Christmas Day; with us the preparations for building are not made till the commencement of spring. The nest is placed at the summit of a tree, or in some countries, as we have said, upon the tops of houses, and is formed of twigs or dry leaves, covered with a thick layer of clay; within this is placed a bed of delicate fibres or hair, upon which the eggs are deposited; the structure is then protected from the attacks of an enemy by a roof of dry thorns or twigs, woven lightly together, but sufficiently strong to keep off intruders; the entrance to the nest is effected through a hole at the side. The brood consists of seven or eight eggs of a green colour, sprinkled with brown spots. In three weeks the young are hatched, and are fed by both parents on a great variety of insects, earthworms and snails, the greatest caution being employed to avoid discovery of the nest; and so attached are the parents to their offspring, that we have known a female continue to brood after having received a shot in her body. When taken young from the nest the Magpie becomes extremely tame, and, like others of its race, soon learns to imitate words and whistle tunes, without having been subjected to the operation of *tongue slitting*, popularly supposed to be necessary before these birds can be taught to speak; in spite of their docility they are, however, most troublesome creatures, and tales without number might be told of the mischief they have wrought by throwing suspicion on innocent people by their thievish propensities, for they seem to delight in abstracting any bright or glittering object that attracts their attention.

THE BLUE MAGPIE.

The Blue Magpie (*Cyanopica Cookii*) is frequently met with in the southern and central parts of Spain, and a very similar species (*Cyanopica cyanea*) inhabits the Crimea, a large portion of Siberia as far as the Amur river, and the whole of China. These birds have been separated from other members of the family on account of the great difference of the tints of their plumage, which is so extremely beautiful that the European species is pre-eminent among its feathered relatives; in both the species under consideration the back is pale brownish grey, the throat and cheeks greyish white, and the wings, quills, and tail light blueish grey; the eyes are reddish brown, and the beak and feet black. The plumage of the young birds is paler, the black upon the head and the blue of the wings being almost imperceptible; the grey of the body is very dingy, and the wings are marked with two indistinct grey lines. The length of both species is thirteen and a half to fourteen inches, their breadth sixteen inches to sixteen and a half; the wing measures five and a quarter, and the tail eleven inches; the female is not quite so large as her mate.

All such districts of Southern and Central Spain as are covered with woods of oak-trees are frequented by the Blue Magpie in great numbers, but it is rarely seen in the eastern provinces, over which the oak is but sparsely scattered. These birds are also met with in North-western Africa, living everywhere in large flocks; they sometimes settle upon the houses, and have no hesitation in constantly seeking their food amongst the refuse of the busiest streets. In most of their habits they closely resemble the Common Magpie, and when exposed to danger exhibit so much cunning in evading pursuit as to render their capture a very difficult and wearisome operation. The *voice* of the Blue Magpie is, however, quite unlike that of the member of its family with which we are all so familiar; its note is very prolonged, and when several pairs are chattering gaily to each other their tones rather resemble the lusty sounds produced by the Green Woodpecker than those of their congeners. In Spain this species does not commence its building operations until May, but in other countries is somewhat earlier in the preparations for its young; the nest, which resembles that of a Shrike, has an outer frame of dry branches, lined with blades of grass, shoots of plants, and similar materials, which are selected with great care. Many nests are built upon the same tree, a whole party taking up their residence at a short distance from each other, preferring under these circumstances their favourite elms or other lofty trees as affording the safest lodging for the young. The brood consists of from five to nine eggs: these are of a greenish yellow, mottled with indistinct patches of a deeper shade, and spotted or streaked with olive brown markings, which occasionally form a kind of wreath at the broad end.

The BLUE RAVENS (*Cyanocorax*), as they have been called, are a species of Jays which appear to form a connecting link between the Magpies and the Jackdaws. These birds inhabit South America, and are remarkable for the magnificence of their plumage; their powerful beaks are usually as long as the entire head, somewhat compressed towards the tip, slightly arched at the roof, and covered with bristles at the base; the wings, in which the fifth and sixth quills are longer than the rest, extend to the root of the long tail.

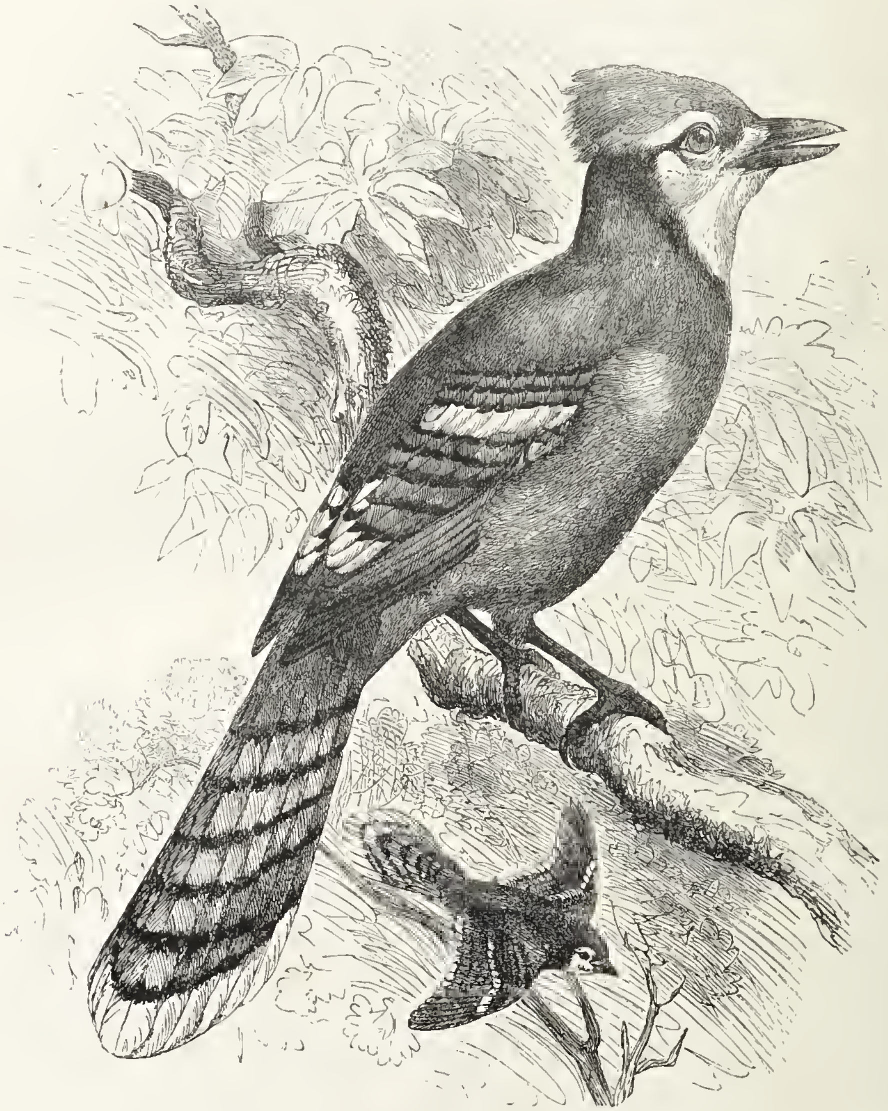
THE HOODED BLUE RAVEN.

The Hooded Blue Raven (*Cyanocorax pileatus*) is about fourteen inches in length, seventeen broad, with wings six inches, and tail six and a half inches long. The forehead, bridles, and upper part of the head (the feathers of which are considerably elongated), are of a rich black, so are the sides of the neck and the entire throat; the nape, back, wings, and tail, bright blue, and the entire lower part of the body white, as are also the tips of the feathers that compose the tail; above and below the eyes is a broad, crescent-shaped spot of sky blue. Schomburghk tells us that these beautiful birds frequent high trees, and subsist upon fruit or seeds; they are very shy and restless, and are easily discovered through the constant utterance of their discordant cry. The nest, which is artistically constructed, is built at the summit of a lofty tree. The eggs, two in number, are brownish white, spotted with brown. Beyond these few facts we know nothing of the Hooded Blue Raven in its native haunts.

THE CRESTED BLUE JACKDAW.

The Crested Blue Jackdaw (*Cyanocitta cristata*) is an American species, with which we are much better acquainted. The shape of this bird is slender, its beak short, strong, slightly arched, and pointed; the wings are short, their fourth and fifth quills longer than the rest; the tail long and decidedly rounded. The plumage is soft and brilliant, and the feathers upon the head prolonged into a crest. In the male the predominating colour upon the back is bright blue; the tail-feathers are surrounded by a narrow dark line, the wing-feathers are tipped with black; the ends of the secondary quills, the larger feathers of the wing-covers, and the exterior tail-feathers are white, or of a greyish-white shade; the sides of the head are pale blue; a line which commences at the back of the head and passes round the throat is black, as is also a streak between the eyes; the eye itself is greyish brown, the beak and feet blackish brown. This species is about eleven inches long, its breadth sixteen inches, the wing five inches and a quarter, and the tail five inches.

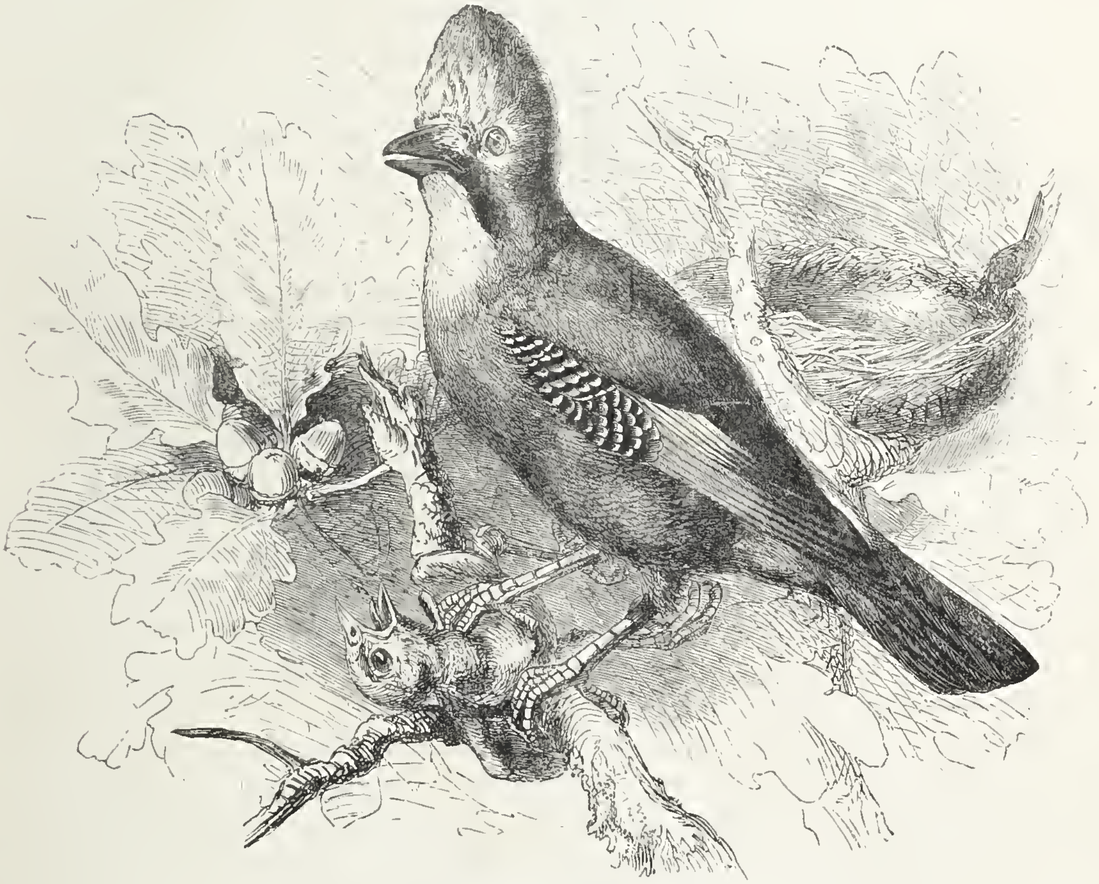
Notwithstanding the beauty of its appearance, the Blue Jackdaw is regarded with but little favour in America, where it is found in great numbers occupying the dense woods or groups of moderately high trees. It is only migratory from the Northern States, and is elsewhere numbered among the stationary birds. Wilson calls this species the *Bird Trumpeter*, from the remarkable sound that it produces when alarmed; and we learn from other writers that it can imitate the cry of the Buzzard and Sparrow Falcon to such perfection as frequently to terrify the smaller feathered denizens of the woods, and raises such an uproar on perceiving a fox or other enemy as compels the intruder to sneak quietly away. Its attacks upon the eggs and young of other birds are extremely merciless; and, indeed, it may be regarded as a most voracious and destructive bird of prey, which devours not only small quadrupeds, but will attack very large and powerful members of the feathered tribe should they be wounded, and thus for the time incapable of resistance; yet Audubon tells us that the Blue Jackdaw is a most arrant coward, and that it will often fly before an adversary no stronger than itself. It obtains



THE CRESTED BLUE JACKDAW (*Cyanocitta cristata*).

its prey rather by extreme craft than by open warfare, for even Thrushes and other small birds can scare it from their nests, into which, however, it often manages to steal if left unguarded only for a moment; it will also attempt to seize young chickens, but is at once baulked of its purpose if startled by an angry cluck from the hen. Large quantities of seeds, all kinds of insects, and flesh are also eaten by these birds. During the autumn the maple, oak, and other similar trees are thickly covered by swarms of Blue Jackdaws, who not only satisfy their present wants, but carry off large quantities of seeds or acorns, storing them up as a provision for the winter, and by this means greatly assist in spreading the growth of these trees over the face of the country.

The number of broods varies with the district in which the Jackdaws are found, some breeding but once and others twice in the year; the nest is formed of twigs and other dry materials, lined with a bed of delicate fibres, on which, in due season, four or five eggs are deposited; these latter are olive brown, marked with dark spots. During the time that the mother is sitting the male employs every precaution to prevent the discovery of his young family; he visits his mate with the utmost secrecy, and preserves the strictest silence while in her company. The young are fed principally upon insects. Nestlings may be easily reared in confinement, but it is never safe to trust the Blue Jackdaw in an aviary with other birds, as it is not uncommon, under these circumstances, for it to destroy its companions one after another. Audubon gives a most interesting account of an attempt he made to naturalise this species in Europe, but which unfortunately proved abortive; the birds, about thirty in number, destined to make the experiment were placed by him in a large cage, and at first exhibited every symptom of fear, refusing the food he proffered them, and crouching in the corners



THE COMMON JAY (*Garrulus glandarius*).

of the cage; by the next day, however, all had regained their usual spirits, and, taking up seeds of maize in their claws, hammered at them with such hearty good will that the noise they produced sounded more like a diminutive party of smiths than the efforts of birds; quarrels seldom occurred, and the party reached Europe in excellent health and spirits, but had not been long exposed to the change of climate before they began to be infested by numerous parasites, and only one survived to reach London. Since this attempt of the American naturalist many Blue Jackdaws have been brought to Europe, but in no instance have the efforts to naturalise them proved successful.

THE COMMON JAY.

The COMMON JAY, or OAK JACKDAW (*Garrulus glandarius*), is an European species, bearing no inconsiderable resemblance to the American bird above described, but its beak is stronger, and the tail shorter and less rounded. The plumage is silky, lax, and flowing, the feathers upon the head being prolonged into a crest. Its colour is principally greyish red or greyish brown, darker upon the back than on the lower parts of the body; the rump is white, the throat whitish, and marked upon its upper portion by two broad black streaks, commencing on the cheeks; the forehead is speckled with black and white; the quills are black, with the exception of a greyish-white space upon the outer web; the tail-feathers are black, occasionally edged with blue; the covers over the primary quills are striped alternately with blue, black, and white, producing a very lustrous effect. The eye is light blue, the beak black, and the feet horn colour. The length of this species is about thirteen, and its breadth twenty inches; the wing measures six and a half, and the tail five inches and three-quarters. The female is somewhat smaller than her mate.

A species closely related to this bird, but differing from it in the markings of the head, is occasionally met with in the south-eastern parts of Germany; its actual habitat, however, is North-western Asia, and members of the group to which it belongs are found in Central and Northern Asia. The Jay inhabits all the wooded districts of Europe except its northern parts, and is also met with in Central Asia and Western Africa; in Germany it is exceedingly common, but in England somewhat scarce. This bird frequents pine forests, woodland pastures, or leafy groves with equal impartiality, living during the summer in pairs, but at other seasons of the year flying over the country with its companions in small parties; it seems to avoid localities where there are no oak-trees, such districts being rarely visited. The Jay is extremely restless, and though in some respects a lively and interesting bird, is so crafty as to render it at times very troublesome, not only to its feathered associates, but to man. When excited, it places itself in a succession of strange attitudes, and imitates a great variety of sounds with amusing correctness. Whilst in a tree, its movements are light and active, and its gait upon the ground by no means awkward; but its flight is heavy, and it rarely remains for any length of time in the air, preferring to perch at short intervals upon trees or bushes, using them, however, not merely as resting-places, but as temporary shelter from the numerous feathered enemies by whom it is constantly pursued in the course of its short excursions from one wood to another. Naumann describes the dread in which many birds of prey are held by the Jays as so great, that they rarely venture to congregate in large flocks, but fly apart over the open country, living according to the advice of the old French maxim, "Chacun pour soi." The wonderful power possessed by this species of imitating the voices of other birds is noticed by many writers. Naumann heard a Jay whinny like a foal and crow like a cock; and Rosenberg tells us that late in the autumn, when seated beneath a tree, he heard one successively imitate the voices of the Magpie, the Shrike, the Thrush, and the Starling, and that on searching the branches to obtain a sight of such unseasonable vocalists, he discovered that all these various sounds were produced by a Jay, perched on a bough just above his head.

Of this bird it may be said, in the broadest sense of the word, that it will eat anything it is possible to obtain or vanquish; nothing, from a mouse to the smallest insect, escapes its voracity. During the autumn it often subsists for weeks together upon acorns and birch or hazel nuts, softening the former in the crop, and afterwards tearing off the shell with its beak; the latter it breaks by hammering upon them without any such preparatory process; Naumann also mentions having seen one of these birds in the act of killing a Thrush, and adds that they frequently work great destruction among young Partridges. The period of incubation commences early in the spring; the nest, which is by no means large, is placed in the branches of a tree at very various heights from the ground, and formed of dry stalks or small twigs, neatly lined with fibrous roots. The eggs, five to six in number, are laid about April; they are of a dirty white, thickly marked with greyish-brown streaks and spots, some of which form a wreath around the broadest end. Only one brood is produced during the year. The young nestlings leave the shell in about sixteen days, and are fed at first on caterpillars, larvæ, worms, and a variety of insects, but at a later period are reared upon the flesh of young birds. Falcons and Sparrowhawks are among the many enemies with which the Jay has to contend; by the former it is immediately vanquished, but with the latter it will sometimes struggle long and fiercely, the combatants not unfrequently falling to the ground, exhausted by the violence of their efforts. The Horned Owl is a still more formidable assailant, destroying many birds belonging to this species; and their nests are constantly sacked by the Tree Martin, whose approach is often greeted with the most appalling cries as the parents attempt to drive the destroyer from their young. In its intercourse with man the Jay is extremely wary, and often succeeds in exasperating the sportsman, as, while in safety itself, it derides his efforts by its cries, and at the same time warns the other denizens of the wood that danger is approaching. If taken young, these birds may be trained to utter words, but their many disagreeable propensities render them even more unfit for a life of confinement than their American congeners.

In the more northern countries of Europe where the Common Jay is not met with, we find it replaced by a species whose delicate beak, decidedly rounded tail, and dusky plumage, have caused it to be regarded as the representative of a distinct group.

THE UNLUCKY JAY.

The UNLUCKY JAY (*Perisoreus infaustus*) is about twelve inches long and eighteen broad; its wing and tail measure five and a half inches. The prevailing colour of the adults is a light reddish grey, the quills and centre tail-feathers are grey, while upon the wings and the exterior tail-feathers there are patches of reddish brown; the upper part of the head is blackish brown. Young birds are known by the comparative paleness of their tints, and the indistinct markings upon the lower portions of the body. The eyes are greyish brown, the beak and feet black.

The dense fir and pine forests of Russia and Siberia are in some places numerously inhabited by this species, which has been known to fly as far as Germany, and, though rarely, is occasionally seen in Norway and Lapland. In some respects it resembles the bird we last described, but its activity and intelligence are inferior, and its mischievous propensities by no means so conspicuous as in the Common Jay. Wilson tells us that it is so bold and inquisitive that it will perch upon the cap of the woodcutter when engaged at his work, and testifies so little fear of man as to follow flocks of reindeer to their resting-place, even when accompanied by their herdsman. Its gait upon the ground resembles that of the Jackdaw, but amongst the branches it is considerably more active in its movements. When perching upon a tree it often appears to be under no anxiety to conceal itself, and seems to trust to the inconspicuous colour of its attire as a sufficient protection from the eye of an enemy. The flight of the Unlucky Jay is unsteady and struggling, and its cry, which is composed of two syllables, has been compared to that of a man in distress; Schräder speaks of it as being not unlike that of the Shrike, composed of various hoarse notes, mingled with sounds resembling the mewing of a cat. Nuts, berries, seeds, acorns, and insects of all kinds are eagerly sought after by these birds; they will climb amongst the fir and pine trees like Titmice, to obtain the contents of the cones, in very much the same manner as that practised by the Crossbills, and as winter approaches will lay up a goodly store of these provisions; but their hoards are frequently plundered by squirrels or woodpeckers who have managed to discover the secret of their hiding-place.

This species commences its building operations in March: a nest which we obtained was a large structure, formed externally of twigs, moss, grass, and strips of pine branches; the interior was lined with an extremely thick layer of hair and Ptarmigan feathers. The eggs are usually from five to seven in number, of a greenish white, thickly covered with irregular dingy spots of greenish grey or olive green. The attachment of these birds to their young is extreme; should a sportsman approach their nest, the parent will fly down, and hobble along the ground as though lame, in order to draw his attention from the little family, and should it succeed in luring him to a safe distance from the spot, will rise suddenly into the air, and return by a circuitous flight to the place from whence it came.

When a flock of these birds is discovered, their capture is accomplished with little difficulty, for they will never desert each other in a moment of danger, so that should one member of the party be taken the rest become an easy prey. The Unlucky Jays are commonly to be met with throughout the whole of the fur districts in North America, where they may be seen hovering about the encampments of the trappers during the whole season. According to the account of Captain Blackiston, their capture is sometimes accomplished in the following manner:—A man lays himself flat down, either in a boat or upon the ground, draws a cloth over his head and shoulders, stretches out his hand, in which he holds a scrap of dry meat, and quietly awaits the result; his purpose is soon accomplished, for down come the birds to attack the meat, when, just as they are about to give the first peck at the tempting morsel, the treacherous hand seizes upon them with an irresistible grasp.

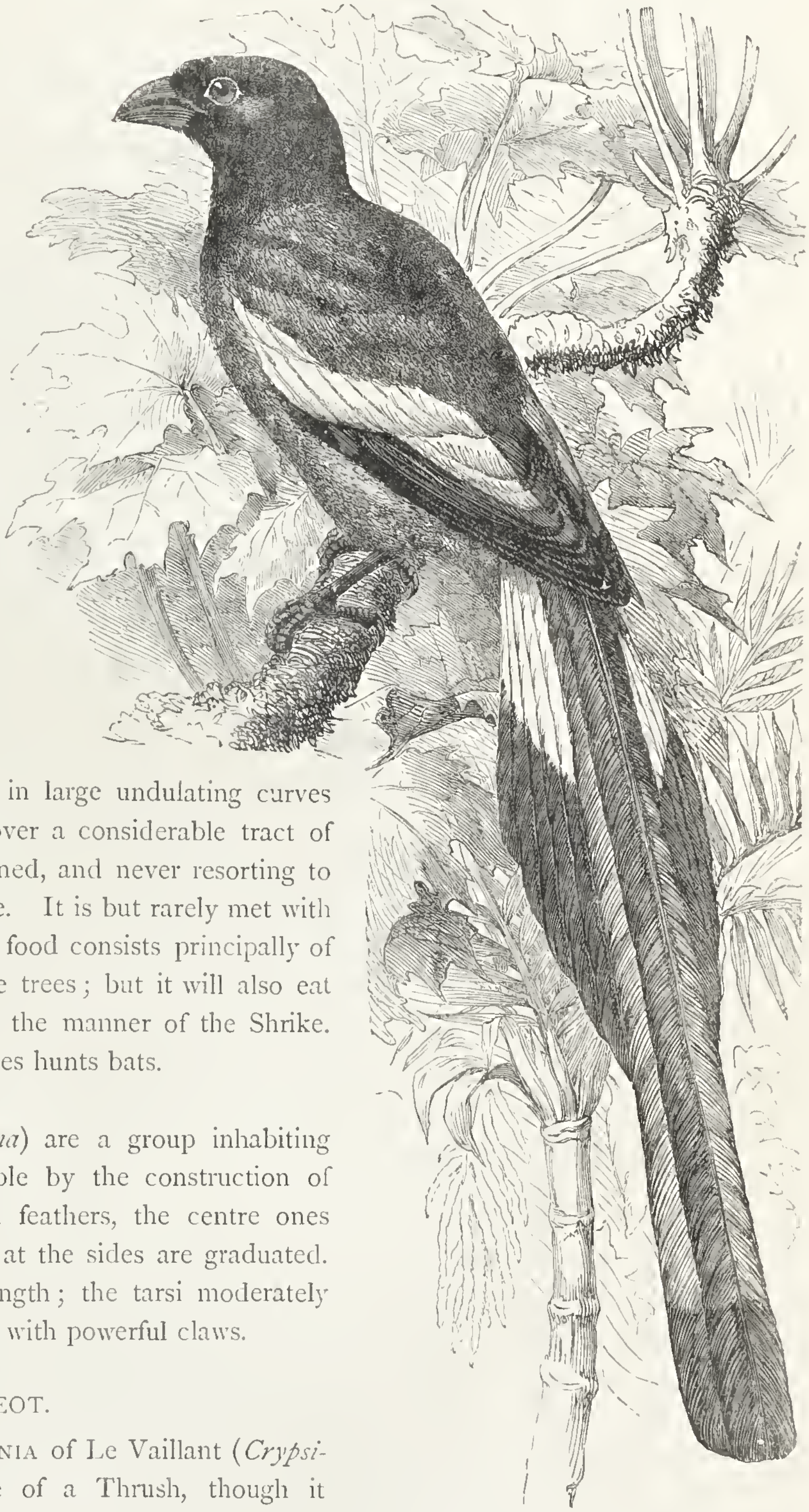
The LONG-TAILED CROWS (*Glaucopes*) are distinguished by their powerful and moderately long beak, which is broad at the base and compressed towards the tip. The upper mandible is slightly arched, hooked at its extremity, and covered at the base with short velvety feathers. The wings are short, their fifth quill longer than the rest; the tail is long and graduated, the feet strong, and the tarsus longer than the middle toe. The coloration of the plumage is brilliant. Like the Jackdaws, these birds almost exclusively frequent thick forests, and closely resemble the foregoing groups in their habits; the few facts we give below apply equally to them and the following species.

The TREE MAGPIES (*Dendrocitta*) constitute a group of Jays inhabiting India. They are large birds, with short, compressed, and very decidedly arched beaks; short, abruptly rounded wings, of which the fifth and sixth quills are longer than the others: wedge-shaped, elongated tails, the two centre feathers extending far beyond the rest; and with tolerably strong or short feet. So entirely are these Tree Magpies to be regarded as Indian, that not more than one or two of the five species mentioned by Jerdon are met with in neighbouring countries. We select for description the KOTRI of the Hindoos (*Dendrocitta rufa*), or, as we shall call it,

THE WANDERING MAGPIE.

The WANDERING MAGPIE (*Dendrocitta vagabunda*) is about sixteen inches in length, ten inches of which are included in the tail; the wing measures six inches. The entire head, nape, and breast are reddish brown or blackish brown, the tints being deeper upon the fore part of the head, chin, and breast, and from thence changing into a greyish shade. The feathers upon the shoulders, back, and tail-covers are deep red; the wing-covers and the exterior web of the secondary quills are light grey, almost white; the rest of the quills are black. The tail is deep grey, and all its feathers tipped with black; the lower part of the breast is red or reddish yellow, the beak black, the feet deep slate colour, and the eyes blood red.

The Kotri is met with throughout the whole of India, and is especially numerous in the wooded plains of Assam, China, and Cashmere. In the more northern parts it is seen in every group of trees and every garden, generally living in the immediate vicinity of villages; it appears to pass the day in flying in large undulating curves from tree to tree, or in roaming over a considerable tract of country, resting where it feels inclined, and never resorting to any particular spot for that purpose. It is but rarely met with in parties, but lives in pairs. Its food consists principally of fruit, or the insects found upon the trees; but it will also eat young birds, destroying them after the manner of the Shrike. Buckland tells us that another species hunts bats.


THE WANDERING MAGPIE
(*Dendrocitta vagabunda*).

The BENTEOTS (*Crypsirhina*) are a group inhabiting Java. These birds are recognisable by the construction of their tail, which is formed of ten feathers, the centre ones being extremely long, whilst those at the sides are graduated. The beak is strong, of medium length; the tarsi moderately long, but weak; the toes are armed with powerful claws.

THE BENTEOT.

The Benteot of Japan, or Tenia of Le Vaillant (*Crypsirhina varians*), is about the size of a Thrush, though it appears much larger, owing to the extent of the long tail. Its soft plumage is principally of a jet black, and gleams with a green or purple sheen; only the forehead, bridles, and throat are pale black, and entirely without lustre; the quills are black, the four centre tail-feathers green, as are also the outer webs of the exterior feathers; the inner webs are of a dull black, the beak and feet are black. Horsfield tells us that this bird is by no means rare in Java, but frequents such very retired spots as to be but seldom met with; it avoids the inhabited parts of the country, and only appears occasionally upon the borders of its favourite thickets, to which it retreats at the first approach of danger. Its flight is unsteady and awkward, and its gait upon the ground equally clumsy. It lives principally upon insects of every description, and its powerful claws would seem to indicate that it can also plunder the nests of its feathered associates. Fruit has been found in the crop of this species.

A very similar group, TEMNURUS, is distinguished from that just described by the shape of the tail-feathers, the ends of which present the appearance of having been cut off at a right angle. The SAW-TAIL (*Temnurus truncatus*), inhabiting Cochin China, is the most perfect representative of this section. Its plumage is of an uniform black, and its length about fourteen inches.

The KITTAS (*Cissa*) are met with in Southern and Eastern Asia. They bear so great a resemblance to the Jays in their mode of life and general deportment, that we have no hesitation in assigning to them a place here, instead of following in the steps of some naturalists who class them with the Thrushes. The Kittas are a race of extremely beautiful birds, elegant in form and brilliant in plumage; their beaks are thick, strong, and almost as long as the head, curving from the base, and bent upwards towards the tip; the feet are large and strong, the toes powerful and of medium length, with formidable claws; the wings are round, their fourth and fifth quills being longer than the rest; the tail is either short and rounded or very long and graduated; in the latter case the central feathers extend far beyond those at the sides.

THE LONG-TAILED KITTA.

The LONG-TAILED KITTA (*Urocissa Sinensis*) is about twenty-six inches in length, seventeen to eighteen inches of this measurement belonging to the tail; the wing measures eight inches. The plumage is very splendid, the entire head, throat, and breast being deep black, shading into blue, with the exception of a white streak which passes over the head and nape; the mantle and upper tail-covers are of a light cobalt blue, the latter tipped with a broad patch of black; the wings are of the same blue tint, the inner web of the quills being black, and all the feathers tipped with white; the tail is principally blue, but its centre feathers are white, and the rest tipped with white and black; the under side of the bird is whitish, shaded with a reddish grey.

The Long-tailed Kitta is met with in the western parts of the Himalaya, and is replaced by a very similar species in the eastern provinces. Swinhoe tells us that it also inhabits the forests around Hong Kong in great numbers. In India it is found living at an altitude of 6,000 feet above the level of the sea, occasionally perching in the brushwood, but spending the greater portion of its life upon the ground, from which it obtains its principal food. In its habits it is so observant and intelligent as to be extremely useful to its feathered brethren, by warning them of the approach of an enemy; indeed, it is said that it will sometimes follow the leopard for miles, and thus prevent it from quietly stealing upon its prey. During its flight, which resembles that of the Magpie, the tail is kept in an horizontal position, but when perched it is held erect, and constantly waved as the bird utters its sharp and chattering cry. The Long-tailed Kitta builds amongst the branches of trees, at various heights from the ground, and forms its nest of twigs woven loosely together and lined with different kinds of vegetable fibre. The brood consists of from three to five eggs of a pale greenish grey, thickly strewn with brown spots, which form a kind of wreath at the broad end. Many of these birds have been brought alive to England, and in India they are occasionally kept tame in a cage.

The FEATHER-BEAKS (*Cissa*) are recognisable by their powerful bills, which are of medium size, slightly arched, and compressed at the sides; the wings are rounded, and the tail but slightly graduated.

THE SIRGANG.

The SIRGANG of Bengal, or GREEN JACKDAW, as it is called by the Anglo-Indians (*Cissa Sinensis*), is a bird about fifteen and a half inches long, of which eight and a half belong to the tail; the wing measures six inches. The coat of this species is also remarkable for its beauty; the predominating colour is a delicate chrysophrase green, shading here and there into blue or blueish green, and changing into yellow upon the head; the black bridles are prolonged to the nape, where they unite, thus forming a kind of ring. The quills and wing-covers are of a beautiful deep red, shaded with brown (those of the old birds are greenish brown); the secondary quills are pale blueish green, with a broad border of black; the tail-feathers are white, those at the side are black, tipped with white. The feathers upon the head are elongated into a crest. The Sirgang is met with throughout the south-eastern districts of the Himalaya, with the exception of Assam, Silhet, and Tenasserim; in Sikim it is often found living at an elevation of 12,000 feet. Jerdon tells us that it wanders from tree to tree in search of delicate leaves or insects, and that it also eats grasshoppers. We learn from other sources that it will fall upon and destroy small animals after the manner of the Shrikes, and is as expert as a Falcon in pursuit of its prey. The voice of the Green Jackdaw is loud, and, compared with that of some of its congeners, not unpleasing. When caged it soon becomes tame, and is attractive in its habits.

THE PLANTAIN EATERS.

THE PLANTAIN EATERS (*Amphibolæ*) constitute a family of very remarkably constructed species, whose habitat is confined exclusively to Africa. Few members of the feathered tribe have given rise to so much difference of opinion as has been occasioned by the desire to assign to these birds their proper place. We have followed the classification adopted by Reichenbach, and shall introduce them here as presenting many characteristics in common with the Jackdaw. To avoid confusion, we have subdivided this very varied group into sub-families or sections.

The TRUE PLANTAIN EATERS (*Musophagæ*) range from the size of a Raven to that of a Jackdaw. Their body is elongated, the neck short, the head of moderate size; the upper mandible is very decidedly curved, slightly over-lapping the lower portion, and either indented or furnished at its sides with tooth-like appendages; the wings are of moderate length, and rounded, their fourth and fifth quills being longer than the rest; the tail is rather long and rounded, the tarsi strong and comparatively high. The foot is not constructed after the scansorial type—three of the toes being placed in front and one behind; it is true that they can move the exterior toes slightly backwards, but never so far as to pair with the one behind, except when under the hands of the bird-stuffer. The plumage is soft, in some species almost downy, and occasionally very brilliant in its hues.

The Plantain Eaters inhabit the dense and extensive forests of Central and Southern Africa, but are never found in the treeless districts of that continent; their habits are social, and they usually live in small parties, seldom consisting of more than fifteen birds. Some species pass the day in flying noisily about, whilst others spend their time in climbing with great activity amongst the trees, or in searching for food upon the ground. The flight of these birds is light and easy, their short wings enabling them to turn in the air with great facility; they are not very remarkable for intelligence, but in some respects exhibit considerable foresight and prudence, and though extremely timid in their intercourse with man, associate freely with their feathered brethren. They feed principally upon leaves, buds, fruit, berries, and corn, and for this reason they usually inhabit such localities as are well watered and rich in various kinds of trees. We are unacquainted with any particulars of their incubation, except that the nest is usually built in the hollow trunk of a tree, that the eggs are white, and that the young remain for a considerable time under the care of their parents.

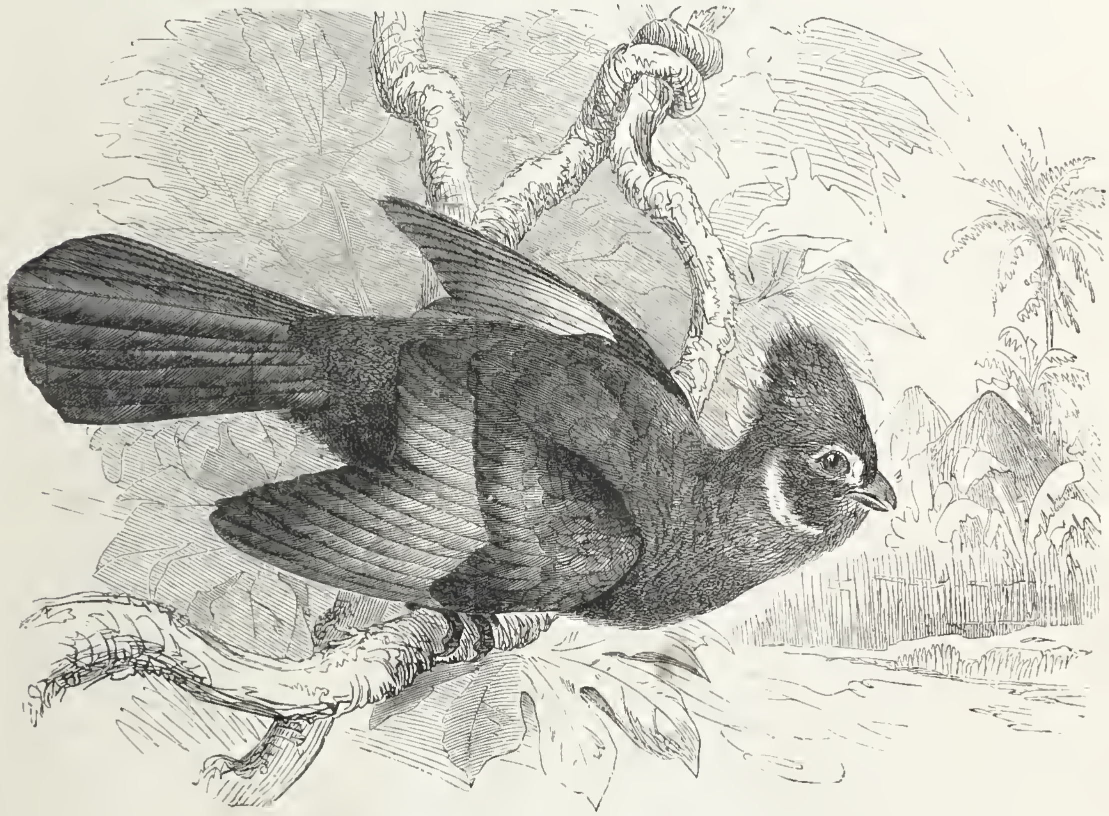
THE BANANA EATER.

The Banana Eater (*Musophaga violacea*) is met with in the forests of Agra, upon the Gold Coast, and is replaced by a very similar bird in Western Africa. This species is distinct from its congeners by the peculiar formation of its beak, the upper mandible being covered for a considerable extent by a horny plate, which is also spread over a large portion of the forehead; the beak itself is very powerful, and arched broadly from the brow to the tip, where it terminates in a slight hook, projecting over the somewhat feeble inferior mandible; the edges of the bill are indented, and the nostrils are situated in the fore part of the upper beak. The bridles and a patch around the eyes are quite bare; the wings are of medium length, their secondary quills longer than the primaries; the tail is comparatively short, broad and rounded at its extremity; the feet are short but powerful. Swainson speaks in glowing terms of the beauty of this species—he regards it as truly a king among birds, and describes its plumage as being principally of a rich, lustrous, purple black, the splendour of which is enhanced by the contrast presented by its magnificent bright red wings; the beak is also very striking in appearance, being of a bright yellow, shading into brilliant red. The soft and delicate feathers which cover the top of the head resemble brilliant red velvet; the rest of the plumage is

THE BANANA EATER (*Musophaga violacea*).

deep violet, and shines with a beautiful green light when seen in the rays of the sun ; the quills are red, tipped with violet, and shaded with lilac ; the bare places round the eyes are also red, and are thrown into strong relief by a dazzling white streak, which passes beneath them ; the feet are black, the eyes brown. The young are without the small red velvety feathers upon the top of the head, but in other respects their plumage resembles that of the old birds. The length of this species is about twenty inches, the wings and tail measure eight inches and a half.

We are acquainted with but few particulars concerning the Banana Eater, which, until the last few years, has been numbered amongst the greatest rarities of our collections ; but we learn from travellers that it inhabits the western coast from Senegambia to Lower Guinea, living in pairs, and passing nearly the whole of its life in the same locality ; its movements, habits, voice, and food, seem to differ but slightly from those of its congeners with which we are more familiar.



THE WHITE-CHEEKED HELMET BIRD (*Corythaix leucotis*).

We are much better informed as to the habits of

The HELMET BIRDS (*Corythaix*). These elegant and brilliantly-coloured birds are slenderly formed, with rounded wings, of which the fifth quill is longer than the rest. The tail is of medium size, the beak short and triangular, furnished with a slight hook at the extremity of the upper mandible ; the nostrils are partially covered by the feathers on the brow, the plumage is rich ; upon the head the feathers are prolonged so as to form a kind of helmet composed of green feathers. The wings are of an uniform purplish red, and the eyes surrounded by a bare flesh-coloured ring. All the various members of this group are remarkably alike, both in their appearance and mode of life.

THE WHITE-CHEEKED HELMET BIRD.

The White-cheeked Helmet Bird (*Corythaix leucotis*) is an inhabitant of Abyssinia ; the colour of this species is for the most part green : the beak and wings are deep greenish violet, the tail is blackish violet, marked with dark coloured undulating lines; the belly and legs are deep grey. The helmet is dark green; a spot in front of the light brown eyes, and a streak which passes from the ear to the fore part of the throat are pure white; the wings are of a magnificent bright red, and bordered with yellowish green. The eye is surrounded by a ring of small reddish brown warts; the upper mandible is green, as far as the nostrils, and blood-red at its tip; the feet are brownish grey. The length of this species is about seventeen inches, its breadth twenty-one inches and a half; its wing measures six inches and three-quarters, and the tail eight inches and a quarter; the female is somewhat smaller than her mate, but does not differ from him in other respects. The Helmet Bird is found either at a considerable altitude in the mountains, or frequenting well-watered and thickly-wooded valleys, where it passes the greatest part of its life in flying from one tree to another in small flocks, only coming to the ground for a few moments at a time when in want of food, and immediately returning to seek shelter in the branches. When occupied in this manner the movements of this species resemble those of the Jackdaw, for the whole party does not alight at the same time, but steal down one by one, preserving the strictest silence, and after following exactly in the steps of their leader, return to the sycamore or tamarind tree that has been selected as a general rendezvous; here they assemble regularly both at night and during the mid-day heat, and when thus congregated at the summits of the branches, present a spectacle of such brilliancy and beauty as cannot fail to excite the admiration of all who see them. They hop and fly with the greatest liveliness and activity from bough to bough, and, apparently, are by no means desirous of eluding observation. Their flight is undulating, and effected by a series of violent strokes until the desired height is attained; the bird then spreads its wings as though to display itself to the utmost advantage, and sinks slowly towards the ground before again rising and continuing its course. During these evolutions the neck is outstretched, the head elevated, and the tail alternately opened and closed. The voice of the Helmet Bird is very peculiar, and has somewhat the effect of ventriloquism, often misleading the listener as to the position of the owner. We found both berries and seeds in the crops of some specimens that we killed, and observed that they were always most numerous in localities where the former abounded; we also procured a pure white egg from the ovary of the female Helmet Bird, which was not unlike the egg of a domestic pigeon, both in size and shape, but distinguishable from it by the superior delicacy and polish of the shell; the nest we could never discover, but believe it to be built in the trunk of a tree. These birds are so extremely shy and restless, as to render their capture a work of great difficulty, if the sportsman should not succeed in taking them unawares whilst disporting themselves in the crowns of their favourite trees. Verreaux mentions a very curious fact connected with this species, namely, that the magnificent purple of the tail-feathers entirely loses its beauty when exposed to moisture, and that the colour may be rubbed off with the fingers when wet; but as soon as the plumage is dry it recovers its full brilliancy of tint. A strange illustration of this peculiarity was afforded in the case of a Helmet Bird in the Amsterdam Zoological Gardens, which, having been seized with cramp, was drenched with cold water; some hours afterwards the creature died, and it was then discovered that the wing upon which it lay was still wet, and had changed from red to blue, while the upper wing had dried before death ensued, and had therefore regained its full gorgeousness of hue.

THE TURAKO.

The TURAKO (*Corythacola cristata*) may be regarded as the giant of this family. It is a very remarkable species, resembling the Helmet Birds in some respects, but differing from them in others so decidedly as to cause it to be regarded by some as the type of a distinct group. These birds are remarkable for the great size of their limbs, and also present marked peculiarities in the formation of the beak, and in the crests with which their heads are adorned. Their body is powerfully constructed, the wings of moderate size, and rather pointed, the fifth quill being longer than the rest, the fourth and sixth, however, almost equalling it in length; the tail consists of ten broad rounded feathers, slightly graduated at the sides; the tarsi are short and strong, the toes long, and armed with thick claws; the beak is powerful, and decidedly arched, somewhat rounded at the roof, and indented at its edges. The crest is formed by elongation of the feathers upon the brow and top of the head, the region of the eyes and bridles are also covered with feathers. The plumage is thick and soft, and upon the under part of the body slightly downy. In size this species will bear comparison with the Raven. Its length is about two feet two inches, the wing measures one foot, and the tail one foot and one or two inches. A bright green or Turkish blue usually predominates in the coloration of the feathers; those which form the crest are, on the contrary, black, tipped with dark blue; the breast and fore part of the belly are yellowish green, the rest of the under portion of the bird pale reddish brown, the tail greenish blue, tipped with bright blue, and marked with a broad streak of black towards its extremity. The beak is yellow, lighter in shade towards its base; the feet are of a leaden hue. The male and female resemble each other, but the young are without the crest, and have the throat bare; the beak and upper part of the head are black, and the whole coat much paler than in the adults.

The habitat of the Turako is confined to Western Africa, where it exclusively frequents such tracts as are well watered and thickly planted with trees, living in the same manner as the Helmet Birds, and rarely flying for any length of time, owing to the great difficulty it has in sustaining its heavy body, or rising to any great height in the air. Juicy fruits, such as figs or bananas, constitute its favourite food, but it will also eat grasshoppers and a variety of insects, and is said to do great mischief in plantations by the quantities that it devours. The Turako is constantly on the alert against danger, and on the slightest alarm raises its crest, which is usually laid flat, elevates its head, and turns about with every symptom of fear, previous to seeking safety in some other locality, where it conceals itself from pursuit with so much skill as to render its capture a work of difficulty, in spite of the observation it attracts by its loud, hoarse cry.

The second division of the Plantain Eaters constitutes a distinct group, called the

SPLIT-BEAKS (*Schizorhis*), also inhabitants of Western and Central Africa, distinguishable from the species already described by their elongated bodies and comparatively long wings, in which the fourth quill is longer than the rest, and also by the construction of their beaks, which are strong, and nearly as thick as they are broad; the upper mandible is very decidedly curved, and but slightly indented at its edges. The plumage of this group is dusky, and the crest upon the head of a peculiar shape.

THE ALARM BIRD.

The ALARM BIRD (*Schizorhis zonurus*) measures about one foot seven inches and a half in length, and two feet four inches in breadth; the wings and tail measure nine inches and a half. The female is larger than her mate, but resembles him in other respects. In these birds the upper part of the body is of an uniform brown, and the lower portion light grey from the breast downwards. The elongated feathers which form the plume are bordered with white, those of the back, so far as they are visible, blueish grey; the quills are blackish brown, and all except the first marked upon their inner web with large, square white spots. The centre tail-feathers are light brown; the four exterior ones are brown at the tip, and from thence upwards white, broadly striped with brownish black at their roots. The eyes are greyish brown, the beak greenish yellow; the feet are dark grey.

This species appears to be spread over a considerable portion of the African continent, and travellers mention having seen it in Abyssinia, about the Blue River, and at the source of the White

Nile. The cry of the Alarm Bird so closely resembles the voice of the monkey, that even experienced sportsmen are deluded into the belief that they are in the vicinity of a party of baboons, and find, to their astonishment, that the loud and peculiar noise is produced by some of these strange birds, as they sit perched together in pairs or parties on the branches of a neighbouring tree. When about to utter this cry the birds sit bolt upright upon the topmost boughs, and after agitating their tails give forth a sound that penetrates far and wide amidst the surrounding woods. Their habits are shy and cautious; they testify considerable anxiety at the approach of man, except when accustomed to his immediate vicinity, and rarely leave their refuge amongst the trees, except in the morning and evening, in search of the berries that constitute their principal food.

THE ALARM BIRD (*Schizorhis zonurus*).

The COLIES, or MOUSE BIRDS (*Colii*) bear a close resemblance to the Plantain Eaters, but are distinguished from them by the following striking peculiarities. All the species belonging to this group are much alike in appearance; their bodies are rather muscular, and nearly cylindrical in shape, the tail almost twice as long as the body, the wings short and almost rounded, the tarsi short, and toes long; the beak is short, thick, curved from its base downwards, and compressed at its tip; the upper mandible is furnished with a slight hook. The distinguishing characteristics of these birds consist in the construction of the foot, which has four toes all placed in front, but those at the exterior are capable of being turned either to the side or back of the foot; and, secondly, in the peculiarity of the plumage, which is so fine as to resemble the hair upon the back of a small quadruped; the long feathers which compose the tail are, on the contrary, particularly stiff, each of them having a very powerful shaft and webs of remarkable strength; the centre tail-feathers are at least four times as long as those at the sides; the wings are short and decidedly rounded, the fourth, fifth, and sixth quills being longer than the rest. The appellation of Mouse Birds has been given to this group on account of the mouse-like grey that predominates in their plumage, varied occasionally with a reddish or dark grey shade.

THE WIRIWA, AND WHITE-CHEEKED MOUSE BIRD.

The WIRIWA (*Colius Senegalensis*) and the WHITE-CHEEKED MOUSE BIRD (*Colius leucotis*) are both inhabitants of Africa. In the first the brow is grey, and adorned with a tuft of brownish-grey hair-like feathers; the back of the head and sides of the neck are reddish yellow, the remaining upper part of the body blueish grey, the throat light grey, the immediate front of the throat and breast greyish blue, clouded with grey; the belly is reddish brown, the beak red at its base and black at the tip; the feet are bright red, as is a bare ring around the brown eye. The plumage of the White-cheeked species is mouse grey; the lower portion of the body is yellowish grey, the throat dark grey, the brow blackish grey, the cheeks greyish yellow. The webs of the tail-feathers are broader than in those of the Wiriwa. The eye is light blue, the upper mandible of a blueish shade, the lower mandible reddish horn colour, and the feet bright red. Both species are alike in size, being about thirteen or thirteen and a half inches long, and from eleven to eleven and a half broad; the wing measures three inches and three-quarters, and the tail about nine inches. These remarkable birds are found exclusively in Central and Southern Africa, though the northern parts of that continent seem equally rich in their favourite trees. Some species appear to inhabit a very limited tract, whilst the range of others extends from the western to the eastern coast, and from sixteen degrees south latitude to the Cape of Good Hope: all frequent well wooded districts, and are as numerous in the fertile steppes as in the primitive forests. Le Vaillant was the first to give any detailed account of the

THE WIRIWA (*Colius Senegalensis*).

remarkable habits of this group, and so many reliable naturalists have substantiated his statements that we cannot hesitate to give them a place here, though our own observations have not always furnished the same results.

The Mouse Birds, according to the writer we have just mentioned, generally live in small families, numbering about six individuals, and usually select a densely foliaged tree or thick mass of bushes as their gathering place. Only those who have visited Africa, and thus become acquainted with the remarkable characteristics of its luxuriant vegetation, can realise the actual appearance of the haunts thus selected as cities of refuge by these most strange and *mouse-like* creatures. Our readers must, therefore, try to picture to themselves a gigantic tree, with dense and usually thorny foliage, so interwoven with and embedded in the huge parasitical plants that grow around it as to be nearly concealed from view. In this green mass, which is impenetrable to man and beast, and even impervious to the attacks of the sportsman, the Mouse Birds make their home, creeping, like the animals whose name they bear, through such tiny and invisible crevices as to lead the spectator to imagine that they have actually vanished from his sight, when suddenly a little head appears, and the bird makes its exit through the hole by which it entered. How they manage to creep in and out of such small apertures seems quite inexplicable; Le Vaillant describes their motion whilst accomplishing this curious performance as being extraordinarily rapid. Their flight is performed with wings and tail outspread; whilst in the air the whole party constantly utter their shrill cry, which is accompanied by a very peculiar chirping sound; they but seldom rise to any great height when on the wing, and still more rarely settle upon the ground. Le Vaillant tells us that the Mouse Birds pass the night hanging in clumps upon the branches, like bees upon a hive while swarming. Perreaux, who verifies this statement, mentions having seen them clinging to each other whilst asleep, the first bird holding on to the branch with one foot, while it supports a second bird by entwining one of its legs with its own free limb; this second bird, in like manner, supporting a third, until they form a chain that often contains as many as six or seven of these living links. We ourselves have never succeeded in observing either of these curious habits, but have seen them during their sleep not only with both feet upon the branch, but lying full length upon it with the breast downwards. Whilst climbing among the foliage they will often hang like Titmice from the under part of a twig, but never retain this position for more than a very short time. The Colies are far from shy, and are easily captured if it has once been possible to penetrate their fastnesses—indeed, so little timidity do they exhibit that we have seen them caught with the hand.

Their food appears to be limited to vegetable diet, for we have never found insects in their crops, or, indeed, any substances except buds, fruit, or corn. The fruit of the plant called "Christ's Thorn" affords them their principal subsistence, but they will also devour grapes, limes, and cactus figs, getting at them after the manner of the Titmouse, by climbing over their surface. In Central Africa we heard no complaint of the mischief done to the gardens by the Mouse Birds, but in the Cape of Good Hope, owing to the large numbers in which they occur, the inhabitants regard them as formidable enemies. Nets or similar precautions are perfectly useless to prevent their incursions if they have cast their eyes upon a tempting-looking tree, for, if there be an aperture however small, their lithe, elastic bodies can penetrate it with the utmost ease. The nests, which are described as being of a conical shape, and formed of roots of various kinds, cotton-wool, grass, and leaves, are placed close together upon the most inaccessible branches. The brood consists of from six to seven eggs. Large numbers of the Mouse Birds are shot in the Cape, not only on account of the mischief they do, but for the sake of their juicy flesh.

CATCHERS (*Captantes*).

Under this head we class not only those members of the feathered race to which has been assigned, *par excellence*, the name of Birds of Prey, but include with them such families of Swallows and song birds as obtain the principal part of their food by the destruction of animal life. We are fully aware of the difficulties presented by this attempt at a simple and natural classification, which, like many similar efforts, must necessarily be very imperfect, and open to grave objection; but we have adopted it as rendering the general view of our subject more intelligible to the tyro in Ornithology.

All the very various groups we have thus combined under the general name of Catchers are endowed with powerful bodies and comparatively long wings, and, moreover, are remarkable for the velocity and grace of their movements through the air. Their beaks are short, hooked, and frequently rendered more formidable by the possession of a tooth-like appendage to the upper mandible, which fits into a corresponding cavity in the lower portion of the beak; their gape is always large, and often of such great extent as to appear out of proportion to the rest of the body; the crop is but slightly developed or is entirely wanting, and the gizzard a mere capacious bag, provided with strong muscular walls. In all other characteristics presented by the members of this very heterogeneous order so much dissimilarity is observable, that to avoid confusion we must confine ourselves to describing each group in its appointed place.

The Catchers are met with in all parts of the world, but it is only in the warmer climates that they are found in great numbers, or seem to exhibit the full development of their matchless powers, which are alike displayed amid the recesses of the forest or on the heights of mountain ranges; even the inhabitants of the water are not secure against their treacherous rapacity. Some groups carry on the work of destruction during the day, some prefer the evening for their excursions, while others only commence their murderous onslaughts when night has fully closed in, and given them the protection of its sheltering darkness. All have but one mate, and breed once or twice in the year. Their nests are often built with great skill, and usually placed in holes of trees, in crevices of walls and rocks, or, in some instances, upon the ground. The eggs vary from one to eight in number, and the young are tended with great affection by both parents.

BIRDS OF PREY (*Raptores*).

The numerous species included in this group present a remarkable inequality of size, some vying with the largest members of the feathered race in the majestic development of their powerful bodies, whilst others are no bigger than a Lark; still, despite this difference, there is such an unmistakable impress upon their forms and plumage as renders it easy to distinguish a Bird of Prey at the first glance. All the members of this rapacious series are endowed with a powerful and compact frame, broad breasts, and strong limbs; the head is usually round, occasionally elongated, the neck short and muscular, the trunk robust, and the legs and wings exhibit such unmistakable strength in their formation as can leave no doubt as to the attributes of the bird even should it be seen deprived of its feathers, beak, and claws. The beak is short, decidedly curved, hooked at its extremity, and covered with a cere at the base of the upper mandible; the latter is immovable, and somewhat compressed at its sides. The margins of the beak are not only very sharp, but are frequently rendered more terrible by the presence of a tooth-like projection from the upper mandible, which fits into a corresponding excavation in the lower jaw. In such species as are without this tooth-shaped appendage the margins of the upper mandible are waved and trenchant, distinctly indicating their carnivorous propensities. The feet are massive and strong, the toes long in proportion to the size of the tarsi, and very motile; both legs and feet are covered with scale-like plates, and the toes furnished with claws or talons, which are either curved and sharp or comparatively straight, but in both cases rounded above and channelled beneath in such a manner that the lower part of each claw presents two distinct sharp margins. The plumage is generally soft, and formed of large feathers, which are either thick, small, and firm, or broad, soft, and silky, or even woolly in their texture. The bridles, a place between the base of the beak and the eye, and the eye itself are frequently entirely naked, whilst, on the contrary, some members of this group are distinguished by a circle of radiating feathers surrounding the orbit. The quills that form the wings and tail are always of considerable size, and their number in most species is pretty nearly the same—that is to say, ten primaries, and at least twelve or at most sixteen secondaries, form the wings; the tail is composed almost invariably of twelve quills, which appear placed, as it were, in pairs. In some races the feathers cover not only the tarsi, but even the toes, where they are distinguished by the name of *hose*, a term that will be frequently employed in our descriptions of the birds with which we are about to deal. The plumage of the *Raptores* is usually dingy and sombre in its hues, though some few species exhibit considerable beauty of appearance, and the bare places on the head, the comb, wattles, bridles, cere, beak, feet, and eyes are occasionally brightly coloured. The internal construction of these birds is on a par with their external configuration; the skeleton is strong, and the sternum so large as to extend over the whole of the fore part of the breast; the keel is high, the bones of the wings comparatively long, and those of the legs powerfully developed. The bones of the entire skeleton are for the most part without marrow, and thus admit of the entrance of air, received from the large lungs and air-cells which extend throughout the body. The gullet is very dilatable, and is usually enlarged into a crop.

As we have said in our introductory chapter, the sight of the Raptores is very acute, and their eye adapts itself with remarkable facility to varying distances; and if any of our readers have tried the experiment of holding their hands alternately close to and at some distance from the eye of a Falcon, they have no doubt been astonished at witnessing the extraordinary dilations and contractions of which the pupil is capable. In some species the sense of hearing is also good, and we shall shortly have fully to describe the high degree of excellence observable in the structure of the ear of an Owl; their sense of smell, on the contrary, is by no means keen, and that of touch scarcely more acute or reliable. All Birds of Prey are remarkable for great courage, and exhibit such cruelty, rapacity, and cunning as cannot fail to render them terrible foes to all creatures weaker than themselves. In their relations to each other, on the contrary, the different species exhibit great affection; they combine readily in the defence of their companions, and do battle for them with the utmost devotion. To what perfection the intelligence of the Birds of Prey has been brought will be seen in our description of some of the services rendered to our forefathers by the Falcons. As regards their voices, few species are capable of uttering more than two or three harsh and unpleasing notes.

All parts of the world afford everything that is necessary to the existence of these predatory races; they are as much at their ease upon beds of ice such as environ Greenland or Spitzbergen as upon the glowing sands of an African desert; they sweep over continents, and exhibit the utmost indifference whether they alight upon the gigantic trees of a primitive forest or upon the steeples of a densely populated city. As winter approaches, such of these winged freebooters as inhabit northern regions wander south, returning in the spring to their native haunts, each bird

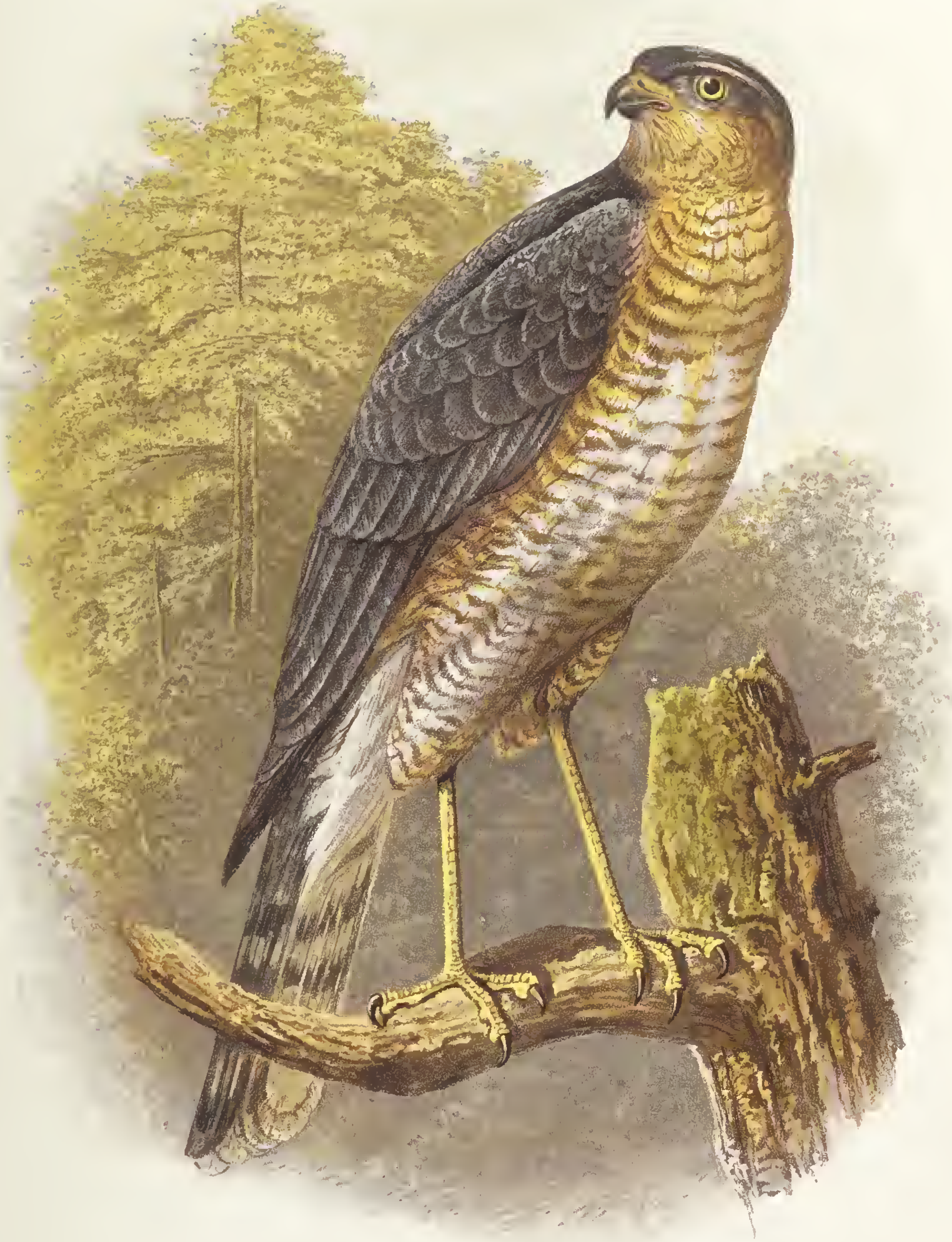


Plate [illegible] Bird.

SPARROW-HAWK —— Accipiter nisus.

(Two thirds Life size.)

with its mate, and at once commence preparations for the reception of the single brood produced by the pair during the whole year. The eyrie, as the nest of a Bird of Prey is called, is usually situated in hollow trees, cavities in old walls, on lofty rocks, or among the most inaccessible branches of the forest, in some cases, though rarely, upon the ground; or they make a platform of boughs, upon which the eggs are deposited. When built upon trees or rocks these eyries are usually very firm and massive in their construction, the walls increasing in height and strength from year to year, as their occupants add to and repair them at the commencement of each season; the interior, however, is never deep, the bed for the young being gradually raised with the rest of the fabric. Large sticks are employed by some Eagles to form the outwork of the eyrie; Tschudi tells us that the Stone Eagle obtains the branches it requires by falling suddenly upon them with closed wings, and thus, by the weight of its body, breaking them from the trunk to which they belong; the branch is then carried off in its talons to the place where the nest is to be built. Such Birds of Prey as build in holes trouble themselves but little about the accommodation of their brood, and lay their eggs without any preparation upon the naked stone, or at the bottom of the cavity they have selected. During the time that these bold and daring birds are occupied in the choice of a mate terrible battles are of frequent occurrence, the spirited antagonists confronting each other on the wing, and fighting till one of them is compelled to quit the field, the combat being often renewed day after day for whole weeks together, until the weaker rival is fairly vanquished, and driven from the locality; the females never appear to mingle in the strife, and are treated throughout the breeding season with the utmost attention and tenderness by their victorious spouses. The eggs, which are from one to seven in number, are rough shelled, and either pure white, grey, or yellow, marked with spots and streaks of a darker shade. In general only the female broods, but she is relieved occasionally by the male bird, who is by no means behind the mother in attachment to the young, and will sometimes perish in endeavouring to ward off danger from his progeny. The nestlings are at first fed upon food half digested in the crop of their parents, and afterwards upon scraps of flesh. The preparation of the nutriment intended for the young usually devolves upon the mother, but both parents combine in watching over the safety of the little flock long after they are fully fledged.

All Birds of Prey procure their principal sustenance by murderous and incessant attacks upon the creatures that surround them; and, besides flesh, many will devour insects, eggs, worms, snails, garbage of all kinds, and, in some rare instances, fruit; they consume great quantities of food, but are also capable of fasting during a considerable period. Their digestive powers are such as to enable them to reduce bones and sinews to a pap; the feathers and hair of their prey are rolled into a ball, and from time to time ejected from the mouth. Perhaps few prejudices are more unjust than the ill-will and enmity with which men usually regard these voracious and daring races, whose destructive propensities are much more frequently employed in their service than in the injury of their property; the Secretary Vulture destroys the Cobra di Capello by crushing its head, whilst other species clear the streets of Africa and Southern Asia of a mass of filth and refuse which, if left to accumulate, would fill the air with poison and disseminate everywhere the seeds of death.

The Raptores divide themselves naturally into three distinct and important groups, gradually connected by a great variety of species, which combine and blend, as it were, the particular characteristics of the more typical members of the order. These three groups are—

The FALCONS, the VULTURES, and the OWLS. We have no hesitation in assigning to the Falcons the first place, both on account of their intelligence and the development of their corporeal attributes; but it is not so easy to decide between the merits of the Vultures and the Owls, as their claims upon our notice are very equal. We, however, regard the Vultures as the more highly gifted birds, and have, therefore, given them the second place upon our list.

The FALCONS (*Falconidæ*) are distinguished by their powerful, slender, and compact bodies, heads of medium size, and short necks. Their wings are large, usually pointed, but occasionally rounded at the extremity; the tail and feet are very various, both as regards formation and strength; the beak is short, and covered at its base with a cere, which is never concealed from view by feathers; the upper mandible is always hooked, and sometimes furnished with tooth-like projections. In some species the plumage covers not merely the entire body, but extends over the legs and feet, even to the toes; the feathers are sometimes short and coarse, and sometimes soft and silky in texture, but always very abundant. The eyes are bright and of moderate size, the crop is protuberant, but never globose. All the Falcons obtain their food by rapine, and may be regarded as the most daring and courageous of the feathered tribes.

The NOBLE FALCONS (*Falcones*) are in every respect the most perfectly organised members of the group to which they belong; both as regards their strength and skill, and the perfection in which they display the characteristics peculiar to their race, they stand supreme. In these noble birds, as they are justly called, the body is very compact, the head moderate, the neck short, the wings long and pointed, the second and occasionally the third quill being longer than the rest. The beak is short but powerful, very decidedly arched at its base, hooked at the extremity, and furnished near its apex with a more or less highly developed *tooth;* the lower mandible is sharp at its edge, and has a hollow in which the tooth of the upper mandible can lodge. The talons of these Falcons are proportionately larger and more formidable than those of any other Bird of Prey; the leg is strong and muscular, and the tarsus short, the middle toe almost equalling it in length. The plumage is thick and harsh, the quills and tail-feathers of great strength. The region of the eye is bare, so as not to interfere with the scope of vision, presenting a naked ring, which is a distinguishing characteristic of the Noble Falcons. The plumage is usually of a light blueish grey above, whilst whitish grey, reddish yellow, or white predominate on the lower parts of the body; the cheeks are often curiously marked by a black streak, which has been called a *beard.* The males resemble the females in the coloration of their feathers, but are somewhat smaller. The young do not acquire the plumage of their parents until they are two or three years old.

Many of these birds migrate during the winter months, and spend a great portion of their time in flying over the face of the country, sweeping along with astonishing strength and rapidity, and rushing down upon their prey with a velocity that renders it impossible for the eye to follow their movements. Considerable variety is observable in the manner in which the flight of the different races of Falcons is accomplished, some moving slowly and with a hovering motion through the realms of air, others sustaining themselves for a considerable time in one spot by means of a gentle and tremulous agitation of the wings. The Noble Falcons, on the contrary, fly with quick short strokes, and an occasional gliding movement, sometimes soaring to an incredible height, and performing most varied and beautiful evolutions, more especially when they are endeavouring to attract the admiration of their mates; at other times they do not usually rise to more than 400 feet above the earth. When perching, the body, owing to the shortness of the feet, is of necessity held erect, but is kept in a horizontal position when walking on the ground, an act which they accomplish in the most awkward manner, endeavouring to render their progress more easy by a constant balancing of the wings. Early morning and evening are preferred by these Falcons for the pursuit of their prey, which they almost always capture whilst in flight, the booty being carried off to some retired spot, where they can devour it undisturbed and at leisure. Some species consume large quantities of insects, but no true Falcon in its free state will eat carrion. The process of digestion is accomplished during a light sleep into which these birds usually fall when satiated, and during which they sit perched upon some tree with streaming and disordered plumage. During the summer they live in pairs, and will allow no intruder to approach the spot where they have selected their building place, but at other seasons they occasionally associate with their congeners and form large flocks, which remain together for weeks and months at a time; towards Eagles or Owls, on the contrary, they exhibit the utmost enmity, and many are the sturdy combats that ensue should the rival marauders encroach upon each other's hunting grounds.

The eyrie of the Noble Falcons is usually very carelessly constructed, and, indeed, some of them will not take the trouble to make even ordinary preparation for their young, but seize upon the nests of some of the larger species of Ravens; whilst such as do build for themselves are content with almost any situation, and merely collect a rough heap of sticks in the holes of trees, rocks, old walls, or even on the ground, the only care for the comfort of the young family consisting in the arrangement of a slight bed of some fibrous material, upon which the brood is laid. The eggs, from three to seven in number, vary considerably in their appearance, but are for the most part round, rough-shelled, and of a pale reddish brown, marked with small spots and large patches of a darker shade. The female alone sits upon the nest, and is meanwhile tended with much assiduity by her mate, who endeavours to enliven her during the performance of her monotonous duty by every means in his power. The young receive the utmost care and attention from both parents, even after they have left the nest, and are instructed and defended from danger with most unwearying devotion.

Perhaps few creatures are so destructive to game and poultry as these Falcons, and yet for centuries they were regarded with distinguished favour by man, who had learnt how to subdue them to his service. So long ago as 400 years before Christ we hear of their being employed in the chase, and in the sixth century the passion for falconry had attained to such an extravagant excess that it was openly reprobated and forbidden in the churches; but even after this the barons, it is said, maintained their right to place their Falcons on the altar during the hours of Divine service. So violent was the rage for this pursuit in England that Edward III. commanded that those who killed a Falcon should be punished with death, and condemned to imprisonment for a year and a day whoever should take one of their nests. To such a high value had they risen in 1396 that the Duke of Nevers and many other noble captives were liberated by Bajazet on the payment of twelve white Falcons, sent to him by the Duke of Burgundy as their ransom. Francis I. kept no fewer than 300 of these valuable birds, which were reared under the care of an officer, who had fifteen noblemen and fifty falconers to assist him in his duties. In England hawking was performed on horseback or on foot—on horseback when in the fields and open country, and on foot when in the woods and coverts. In following the Hawk on foot it was usual for the sportsman to have a stout pole with him to assist him in leaping over little rivulets and ditches; this we learn from an historical fact related by Hall, who informs us that Henry VIII. pursuing his Hawk on foot at Hitchin, in Hertfordshire, attempted, with the assistance of his pole, to jump over a ditch that was half full of muddy water, the pole broke, and the king fell with his head into the mud, where he would have been stifled had not a footman leaped into the ditch and released His Majesty from his perilous situation. When the Hawk was not flying at her game, she was usually *hoodwinked* with a *cap* or hood provided for that purpose and fitted to her head, and this hood was worn abroad as well as at home. All Hawks taken upon "*the fist*," the term used for carrying them upon the hand, had strips of leather, called *jesses*, put about their legs, and the jesses were made sufficiently long for the knots to appear between the middle and little fingers of the hand that held them, so that the *lunes*, or small thongs of leather, might be fastened to them with two *tyrrits*, or rings, and the lunes were then loosely wound round the little finger. Lastly, their legs were adorned with bells fastened with rings of leather—each leg having one—the leathers to which the bells were attached were denominated *bewits*, and to the bewits was added the *creance*, or long string, by which, in tutoring, the bird was drawn back after she had been permitted to fly, a proceeding which was called the reclaiming of the Hawk. The bewits, we are informed, were for the purpose of keeping the Hawk from "winding when she bated," that is, when she fluttered her wings to fly after her game. Respecting the bells, it is particularly recommended that they should not be too heavy to impede the flight of the bird, and that they should be of equal weight, sonorous, shrill, and musical, not both of one sound, but the one a semitone below the other. The person who carried the Hawk was also provided with gloves for the purpose of preventing its talons from hurting his hands. In the inventories of apparel belonging to Henry VIII. such articles frequently occur; at Hampton Court, in the jewel house, were "seven Hawks' gloves embroidered."

Old books on hawking assign to different ranks of persons the sort of Hawks proper to be used by each, and they are enumerated in the following order:—

"The Eagle, the Vulture, and the Merloun—for an *Emperor*.
The Ger-faulcon, and the Tercel of the Ger-faulcon—for a *King*.
The Faulcon of the Rock—for a *Duke*.
The Faulcon Peregrine—for an *Earl*.
The Bastard—for a *Baron*.
The Sacre and the Sacret—for a *Knight*.
The Lanere and the Laneret—for an *Esquire*.
The Marlyon—for a *Lady*.
The Hobby—for a *Young Man*.
The Goshawk—for a *Yeoman*.
The Tercel—for a *Poor Man*.
The Sparrow Hawk—for a *Priest*.
The Musket—for a *Holy Water Clerk*.
The Kestrel—for a *Knave* or *Servant*."

The above list is interesting, as it may be presumed to contain the names applied to the greater part, if not all, of the birds used in hawking.

As in hunting, so in hawking the sportsmen had their peculiar expressions, and the uninitiated may read with advantage the terms employed to designate assemblages of various kinds of birds. Thus we read of a *sege* of Herons or of Bitterns, a *herd* of Swans, of Cranes, and of Curlews, a *dopping* of Sheldrakes, a *spring* of Teals, a *covert* of Coots, a *gaggle* of Geese, a *badelynge* of Ducks, a *sord* or *sute* of Mallards, a *muster* of Peacocks, a *nye* of Pheasants, a *bevy* of Quails, a *covey* of Partridges, a *congregation* of Plovers, a *flight* of Doves, a *dole* of Turtles, a *walk* of Snipes, a *fall* of Woodcocks, a *brood* of Chickens, a *building* of Rooks, a *murmuration* of Starlings, an *exaltation* of Larks, a *flight* of Swallows, a *watch* of Nightingales, and a *charm* of Goldfinches."

It will thus be seen that many technical expressions once employed in Falconry are still in common use.

The Mews at Charing Cross, Westminster, were so called from the word *Mew*, which, in Falconers' language was the name of the place wherein Hawks were kept at the moulting time, when they cast their feathers: the king's Hawks were kept at this place as early as 1377, at the beginning of the reign of Richard II., but A.D. 1537, the 27th of Henry VIII., it was converted into stables for that monarch's horses, and even up to the present time the word Mews is employed to designate the London stables.

In Central Asia the use of these birds for hunting purposes appears to have been carried on with truly Eastern pomp and profusion, for Marco Polo, who wrote about the year 1290, tells us that when Kublai Khan quitted Hambul he took with him no fewer than 10,000 falconers, who were sent out in parties of from 200 to 300 men to hunt over different parts of the country, and were commanded to send all the game they obtained to their master.

On these occasions the Khan rode upon an elephant, and was followed by 10,000 men, who stood in an enormous circle round him, ready to catch the Falcons and bring them back to their owners. Twelve of the finest birds were appropriated to the Sultan, and these, as well as those belonging to the principal nobles, were distinguished by a silver plate fastened to the leg, on which the name of their owner was written, whilst the Falcons belonging to inferior members of the suite were without the badge, and were handed over to the care of an officer appointed for their especial protection. Tavernier, who resided in Persia for many years in the seventeenth century, tells us that the King of Persia had 800 Falcons, of which some were taught to hunt wild boars, wild asses,

ORIENTAL FALCONRY.

antelopes, and foxes, and others trained to go in pursuit of Cranes, Herons, Geese, and Partridges; Chardin, another eastern traveller, informs us that the Persians trained them to fly at the heads of very large quadrupeds, or even men, and blind them. It would appear that this mode of hunting with Falcons is still practised in many provinces of Asia, and Sir John Malcolm, in his "Sketches of Persia," describes the sport of hawking as seen by him when at Abasheher on the Persian Gulf:—

"The huntsmen repair to a large plain, or rather desert, near the sea-side; they have Hawks and greyhounds; the Hawks are carried in the usual manner, on the hand of the huntsman; the dogs led in a leash by the horseman, generally the same who carries the Hawk. When an antelope is seen, they endeavour to get as near as possible, but the animal, the moment it observes them, goes off at a rate that seems swifter than the wind; the horsemen are instantly at full speed, having slipped the dogs. If it is a single deer, they at the same time fly the Hawks, but if a herd, they wait till the dogs have fixed on a particular antelope. The Hawks, skimming along near the ground, soon reach the deer, at whose head they pounce in succession, and sometimes with a violence that knocks it over; at all events they confuse the animal so much as to stop its speed in such a degree that the dogs can come up, and in an instant men, horses, dogs, and Hawks, surround the unfortunate deer, against which their united efforts have been combined. The part of the chase that surprised me most was the extraordinary combination of the Hawks and the dogs, which throughout seemed to look to each other for aid; this, I was told, was the result of long and skilful training. The Hawks used in this sport are of a species I have never seen in any other country; the breed, which is called 'Cherkh,' is not large, but of great beauty and symmetry.

"The novelty of these amusements interested me, and I was pleased on accompanying a party to a village, about twenty miles from Abasheher, to see a species of hawking, peculiar, I believe, to the sandy plains of Persia, on which the Hubara, a noble species of Bustard is found on almost bare plains, where it has no shelter but a small shrub, called 'yeetuck.' When we met in quest of them we were a party of about twenty, all well mounted. Two kinds of Hawks are necessary for this sport; the first, the Cherkh (the same which is flown at the antelope) attacks them on the ground, but will not follow them on the wing; for this reason, the Bhyree, a Hawk well known in India, is flown at them the moment the Hubara rises. As we rode along in an extended line, the men who carried the Cherkhs every now and then unhooded and held them up, that they might look over the plain, and the first Hubara we found afforded us a proof of the astonishing quickness of sight of one of the Hawks. She fluttered to be loose, and the man who held her gave a whoop as he threw her off his hand, and then set off at full speed; we all did the same. At first we only saw our Hawk skimming over the plain, but soon perceived, at the distance of more than a mile, the beautiful speckled Hubara, with his head erect and wings outspread, running forward to meet his adversary; the Cherkh made several unsuccessful pounces, which were either evaded or repelled by the beak or wings of the Hubara, which at last found an opportunity of rising, when a Bhyree was instantly flown, and the whole party were again at full gallop; we had a flight of more than a mile, when the Hubara alighted, and was killed by another Cherkh, who attacked him on the ground. We killed several others, but were not always successful, having seen our Hawks twice completely beaten during the two days that we followed this fine sport."

According to Jerdon, the Bedouins of the Sahara capture large numbers of Peregrine Falcons, and sell them to men who train them to pursue Bustards, Storks, Ibises, and various quadrupeds. The Heron alone, of all birds, seems capable of resisting these terrible assailants, and will sometimes defend itself so courageously with its beak as to drive off the enemy, should the latter not have sufficient experience to seize the Heron by the nape of the neck. In England the pursuit of the

Heron by means of Falcons was practised until very recently, and Sir John Sebright gives the following account of Heron hawking as practised at Didlington in Norfolk:—

"This heronry is situated on a river, with an open country on every side of it. The Herons go out in the morning to rivers and ponds, at a very considerable distance, in search of food, and return to the heronry towards the evening. It is at this time that the falconers place themselves in the open country, down wind of the heronry, so that when the Herons are intercepted on their return home, they are obliged to fly against the wind to gain their retreat. When a Heron passes, *a cast* (a couple) of Hawks is let go. The Heron disgorges his food when he finds that he is pursued, and endeavours to keep above the Hawks by rising in the air. The Hawks fly in a spiral direction to get above the Heron, and thus the three birds frequently appear to be flying in different directions. The first Hawk makes his stoop as soon as he gets above the Heron, who evades it by a shift, and thus gives the second Hawk time to get up and stoop in his turn. In what is termed a good flight this is frequently repeated, and the three birds often mount to a great height in the air. When one of the Hawks seizes his prey, the other soon *binds to him*, as it is termed, and, buoyant from the motion of their wings, the three descend together to the ground, with but little velocity. The falconer must lose no time in getting hold of the Heron's neck when he is on the ground, to prevent him from injuring the Hawks; it is then, and not when he is in the air, that he will use his beak in his defence."

The SCHAHIN, or ROYAL FALCON (*Falco peregrinator*), is highly prized by the Hindoos, who catch large numbers annually. When in pursuit of game, this latter species is not loosened from the huntsman's hand, but is permitted to soar aloft in freedom until its prey is roused, when it swoops down upon it with unerring aim.

The HUNTING FALCONS (*Hierofalco*), the most prized of the Falcon family, inhabit the more northern portions of the globe, and are at once recognisable by their very large bodies, strong and decidedly curved beaks, long tails, and the fact that the feet are only partially covered with feathers; in other respects they closely resemble other Noble Falcons. We have divided these birds into three groups, which we shall call respectively the HUNTING, the POLAR, and the GIER FALCONS. The two former of these sections bear a close resemblance to each other as to plumage, and the young of all three are so much alike as almost to baffle even the eye of a practised naturalist. The plumage of the HUNTING FALCON (*Hierofalco candicans*) is white, marked with longitudinal dark streaks, whilst that of the POLAR FALCON (*Hierofalco Arcticus*) is white, with irregular dark blotches; as both species advance in years, these dark marks gradually fade, and the plumage becomes a most pure and beautiful white. In the young birds the back is greyish brown or deep grey, with very distinct streaks and spots; the feathers upon the top of the head have black shafts, and vary considerably in their shade; the wings and tail are broadly striped, and the lower parts of the body are fawn colour; the brown eye is surrounded by a bare greenish yellow ring. In the old birds the feet are pale yellow, the beak yellowish blue, becoming darker towards the tip, and the cere yellow; the feet of the young are blue. The plumage of the Gier Falcon (spelt also *Ger*, *Jer*, and *Gyr*), on the contrary, is deep greyish blue, striped with black upon the upper part of the body; the tail is light greyish blue, striped with a deeper shade; the quills are brownish black, the breast and belly are grey or yellowish white, marked with long dark streaks, varied upon the sides and hose by irregular spots. The coat of the young is dark brown above, and of a light greyish yellow beneath, streaked with a deeper shade. Nestlings of this species are scarcely distinguishable from Peregrine Falcons of similar age. All these three groups of HUNTING FALCONS are nearly of the same size; the females being about one foot eleven inches in length, and four feet in breadth; the tail measures about nine inches, and the wing fifteen inches.

The Hunting Falcon and the Polar Falcon both inhabit Greenland and Iceland; the Gier Falcon, on the contrary, is met with in the most northerly parts of Scandinavia, Russia, and Siberia, and, according to our own observations, is the only species of Hunting Falcon found in Lapland. We must speak collectively of the habits of these three groups, concerning whose respective peculiarities we are almost entirely without information. All appear to prefer such rocky localities as are in the immediate neighbourhood of the sea coast, and upon which hundreds and thousands of sea birds settle during the breeding season; nevertheless, they do not entirely avoid the wooded parts of the country, for such amongst them as are too young to pair make long excursions inland, even occasionally visiting the mountain ranges of the interior, amongst which the old birds are rarely or never seen. The attachment of these various species to their breeding places is very remarkable; they return to them with such unfailing regularity that we were once accurately directed where to look for an eyrie, even though our informant had neither seen the spot nor heard it spoken of for many years; in their other habits they closely resemble the Peregrine Falcon.

During the summer months they subsist upon sea birds, in the winter upon Ptarmigans, and, according to some naturalists, will devour hares, and live upon squirrels for whole months together. We were on one occasion for three days in the vicinity of the Nyken (two mountains much frequented by sea birds), and watched a pair of Gier Falcons come down morning after morning punctually at ten o'clock, in order to obtain their breakfast. This was very speedily accomplished; both took a rapid survey of the feathered swarm they were about to attack, and then, swooping down with unerring aim, carried off one bird after another until they had obtained the necessary supply. Holwell mentions having seen a Polar Falcon pounce upon two Sea Gulls at the same time, and bear them away in triumph one in each foot; they are also said to destroy Pigeons. At the close of the breeding season the Hunting Falcons often come down from their retirement and approach the dwellings of man, towards whom they exhibit but little fear. When winter approaches they follow the Ptarmigans to their retreats amongst the mountains, and so great is the dread in which the latter holds their cruel and insatiable enemy, that they will frequently endeavour to bury themselves in the snow, if safety by flight seems to be hopeless. When in pursuit of the squirrel their ordinary mode of attack would, of course, be impossible, as the creature is protected by the sheltering trees; the Hunting Falcons, therefore, at once change their tactics, and display a patience and cunning in watching for and stealing upon their victims that strikingly contrasts with their ordinary precipitate and open butchery.

According to Faber, the True Hunting Falcon builds its large flat eyrie amid the fastnesses of some inaccessible rock in the immediate vicinity of the ocean, whilst the Gier Falcon prefers to avoid all the labour of preparation by taking violent possession of the nest of some large Crow. The eggs of the Polar Falcon are laid about June or July, those of the Gier Falcon, according to Nardoi, are usually laid as early as April, though we have found them in the month of July. The colour and size of the eggs is very varied, but those of the Polar Falcon are largest, and have the roughest shell.

Some centuries ago a Danish vessel called the *Falcon Ship* was sent every year to bring these birds from Iceland, and live Falcons are still exported every year to Copenhagen. Large numbers are killed in Iceland and Greenland on account of the mischief they do, but in the north of Asia they are still reared and trained for the chase. In Lapland and Scandinavia they are never captured except for the naturalist. The Raven is the only feathered enemy against whose attacks the Hunting Falcons have to be upon their guard.

The WANDERING FALCONS (*Falco*) differ from the last-mentioned birds in the inferiority of their size, and the construction of the beak, which is smaller and more decidedly curved; the feet are not so entirely covered with feathers, and the tail is somewhat shorter in comparison with the wings.

THE PEREGRINE FALCON.

The Peregrine Falcon (*Falco peregrinus*) is the member of the family with which we are most familiar. The plumage of the old bird is light slate colour on the upper part of the body, and marked with dark grey triangular spots, which produce a striped effect; the brow is grey, the tail striped with bright grey and bordered with yellow towards the tips of the feathers; the wing-quills are greyish black, the inner web being marked with reddish-yellow spots arranged in stripes; the throat is yellow, and marked by two black streaks that commence on the cheeks; the lower part of the breast and belly are reddish yellow, the former streaked with brownish yellow and marked with lozenge-shaped spots; the hinder part of the body is striped with dark irregular patches. During the life of the birds the plumage is covered with a greyish dust. The female is brighter in colour than her mate. The iris is dark brown, the cere, corners of the mouth, and bare places around the eyes are yellow. The young are blackish grey upon the upper part of the body, every feather being bordered with reddish yellow; the throat and upper part of the breast are white or greyish yellow, streaked with light or dark brown; the beak is light blue, the cere and naked places on the head blueish or greenish yellow. The old male is from

THE PEREGRINE FALCON (*Falco peregrinus*).

sixteen to eighteen inches long, and from thirty to forty broad, whilst the female, on the contrary, is from eighteen to twenty-one inches long, and forty to forty-two inches broad; the wing measures from fourteen to fifteen and a half inches, and the tail six and a half to seven and a half inches.

The name of *Peregrine* or *Wandering Falcon* most accurately describes the habits of this species, which is found almost throughout the wide world. Its habitat extends from Northern Asia and Western Europe, and during the breeding season it frequents the northern coasts of the Mediterranean. As winter approaches it migrates to Africa, visiting the very heart of that continent, and occasionally making its appearance in the neighbourhood of the Cape of Good Hope. According to Jerdon, the Peregrine Falcon is regularly met with in India throughout the cold season, during which it roams about the country lying between the Himalaya Mountains and Cape Comorin, but is seen in the greatest numbers on the coast or upon the banks of rivers. These birds appear in India towards the first week in October and leave again in April, but never breed there. The species inhabiting America also migrates farther south, but we cannot speak with certainty as to their being found in Mexico, though we have known instances in which they have flown across the Gulf of Mexico—indeed, so great are their powers of endurance when upon the wing that a distance of a hundred miles seems to be regarded as a mere pleasure excursion by these restless marauders. The Wandering Falcon is very courageous, and its powerful body and bright intelligent eye clearly indicate a high standing in respect to its natural gifts. When about to take flight this species usually spreads its tail, and flies for a short distance close to the ground before rising into the air, where its course is very rapid, and produced by quick, hurried strokes of the pinions; during the period of incubation it soars to a considerable height, but at other seasons keeps comparatively near the earth, and is easily recognised by its slender form, narrow tail, and long, pointed wings. Dense woods afford these birds the retreats they prefer, and even there they rarely retire to rest until late in the evening, selecting their sleeping place with great care in some thickly-covered nook: whilst reposing they perch upon a branch with the neck drawn in so completely as to give their head the appearance of growing from the shoulders, the black cheeks and white throat adding considerably to their striking appearance as they sit warily upon their guard against approaching danger. The cry of this species is powerful and full-toned, but is rarely heard except during the breeding season.

Nothing can exceed the terror in which the Peregrine Falcon is regarded by such of its feathered brethren as cannot compete with it in strength or activity—indeed, no bird from a Wild Goose to a Lark is safe from its murderous attacks. Its prey, which is usually seized when upon the wing, is made to rise from the ground by a variety of tactics. A Partridge it terrifies by performing gyrations above its head, until the frightened creature endeavours to seek safety in flight; Pigeons are often so panic-stricken as to plunge into the water, and Ducks are frequently so overcome with fear and exhausted with their struggles as to be powerless to dive, and thus to elude the dreaded foe. Rapidity of flight is no security against its attacks. Some species of Pigeons endeavour to save themselves by crowding close together in a thick mass, and quitting the locality with all possible expedition; but even this stratagem rarely meets with complete success, for some weary straggler is pretty certain to fall into the clutches of the ever-watchful enemy, who darts down upon its victim like an arrow from a bow. Immense numbers of Crows are also destroyed by these birds, who often subsist for whole weeks together upon their flesh: despite the well-known courage of the Crow, it seems to consider, when brought face to face with this powerful tyrant, that "discretion is the better part of valour," and at once endeavours to slink off unobserved, or beat a very undignified retreat; all attempts at flight are, however, perfectly hopeless, for so rapid is the speed of the pursuer that the eye cannot follow its course, as it flashes down with a whizzing sound, and pounces fiercely upon its almost paralysed victim—indeed, so incredibly powerful is the shock with which the Peregrine Falcon occasionally descends, that instances have been known in which the pursuer has actually killed or stunned itself by the violence of its swoop, or has plunged to such a depth in the water, when endeavouring to seize a duck, as to have been drowned in the attempt. Large birds, such as Wild Geese, are generally disposed of while upon the ground, as their size would render it impossible to contend with them in the air, and the flesh is devoured upon the spot where the victim is killed; more portable prey, on the contrary, is carried off to some quiet retreat, where it can be eaten at leisure. Small birds are entirely consumed, but larger kinds are stripped of a portion of the feathers, and the entrails are thrown aside as unfit for food.

Every variety of situation seems to be regarded with favour by this species, and it will live as comfortably in a crowded city as on precipitous and impassable mountain ranges; when about to breed, however, a decided preference is shown for the latter situation, as affording ready-made holes, which require but little labour to convert them into dwellings for the young; hollow forest trees are also employed for this purpose, and a pair of Wandering Falcons often render their preparatory exertions still more light by the appropriation of a Crow's nest. The eyrie is very slightly constructed of twigs or brushwood, and the eggs, three or four in number, are laid about May or June; these are round, of a yellowish red, spotted with brown. The task of brooding devolves entirely upon the female; the young are fed at first upon half digested flesh, and afterwards with the same in its fresh state. When fledged they are carefully instructed in all the arts required in their freebooting life, and only withdraw themselves from their parents' protection when fully competent to do battle with any member of the numerous species against which their family wages constant war.

One strange habit of the Peregrine Falcon must not be passed over without notice—namely, that at the very first attack made upon it by even the most insignificant and cowardly of feathered assailants, it will at once throw down its prey, or even allow it to be seized and carried off by foes of so timid a character that a spirited clucking hen might drive them from the spot. We have ourselves seen in North-eastern Africa one of these fierce and strong marauders resign possession of three Ducks in succession when beset by an impudent party of feathered mendicants, amongst which the prey was dropped without even an attempt at resistance. Most serious and extensive is the destruction caused by these birds, and since the days of falconry have passed away no service rendered by them can in any degree compensate for the many injuries they inflict upon our property—indeed, but little can be said in their favour, except that they are imposing in their appearance when sailing through the realms of air.

When caged they will sometimes live for many years, and exhibit surprising voracity. Naumann mentions having kept a Peregrine Falcon for some time in confinement, and tells us that on one occasion it devoured the whole of a fox in the course of two days; three Crows were only sufficient for one day's provision, but, on the other hand, it could, if required, fast for a whole week; this bird would seize six Sparrows at a time, three in each foot, and dispatch them, as it squatted on the ground, by biting one after the other through the head, laying down each victim in succession until all were killed.

THE RED-NECKED FALCON.

The **Red-necked Falcon** (*Falco ruficollis*), the smallest and most beautiful of the many kinds found in Asia and Africa, is very nearly related to the bird above described, and is replaced in India by a very similar species called the **Turumdi** (*Falco Chiquera*). The head and nape of the neck of the *Falco ruficollis* are rust red, streaked here and there with a dark shade upon the shafts of the feathers; the back, wing-covers, and small quills are of a deep grey (which during the life of the bird has a blueish gloss), and is marked with irregular black spots; the shoulder is light reddish yellow, the tail is dark grey, with a broad white tip, and ornamented with eight or ten white stripes; the throat is also white, the fore part of the neck, breast, belly, and thighs are light yellowish red, thickly marked with dark grey stripes; the very prominent beard and a streak over the eyes are black, the eye itself is deep brown, the beak greenish yellow, tipped with greyish blue; the feet are light orange.

THE FALCONER.

The male is eleven inches long, and twenty-two inches broad; the wings measure seven inches, and the tail four inches and a quarter. The female, on the contrary, is thirteen inches long, twenty-six and a half broad; her wing measures about eight inches, and her tail five inches and a half.

According to our own observations these beautiful birds are met with south of sixteen degrees north latitude, exclusively frequenting date palms, the broad, fan-like leaves of which form a capital foundation on which to build their eyries. Only on one occasion have we ever seen them on any other tree, but Heuglin tells us that in Central Africa they are also found amongst the Dhuléb palms. A solitary tree of this description is sufficient to induce a couple to settle upon it, and from this lofty and commanding eminence they descend to capture such Weaver Birds, or other small feathered victims, as approach them, darting upon them with a velocity and dexterity that, in our opinion, will bear comparison with the powers of flight possessed by any of their congeners. Large birds they seldom or never attack, and will live not only at peace with them, but actually allow one kind, the Guinea Pigeon (*Stictoenas Guinea*), to build upon the same branch. We never succeeded in our endeavours to inspect one of their eyries closely, as the Dhuléb palm is quite inaccessible to climbers.

THE TREE FALCON (*Hypotriorchis subbuteo*).

We shall confine ourselves to Jerdon's description of the Turumdi. This bird is found throughout the whole of India, but is most numerous in the open country, where it prefers the vicinity of man, and rather avoids than seeks the recesses of the woods and forests. It hunts in pairs, and lives principally upon small birds, such as Larks, Sparrows, or Water Wagtails, and will eat field mice. The eyrie of the Turumdi is built at the summit of a lofty tree, and usually contains four eggs of a yellowish brown colour, sprinkled with brown spots. The young leave the nest at the end of March or beginning ot April. This species is sometimes tamed by the Hindoos, and employed in the pursuit of Quails, Partridges, and similar birds. We have known instances in which they have been trained by their masters to hunt in parties.

THE TREE FALCON.

The TREE FALCON (*Hypotriorchis subbuteo*) is but little inferior to those we have described, either in its powers or the nobility of its appearance. The members of the family of which this bird is the type are smaller than the Falcons we have mentioned, and are distinguished by their elongated bodies, comparatively long and sickle-shaped wings, which extend as far as, or in some instances beyond, the extremity of the tail. The Tree Falcon is twelve inches long, and thirty broad; the wing measures nine and a half, and the tail nine inches; the female is one inch and a half longer, and from two to three inches broader than her mate. The entire upper portion of the body is blueish black, the head of a greyish shade; the nape is spotted with white, the quills black, bordered with reddish yellow, and marked upon the inner web with from five to nine reddish irregularly oval patches. The tail-feathers are slate colour above, grey beneath, and ornamented on the inner web with eight irregular reddish-yellow spots, which form a kind of border; the two middle feathers are without these spots. The lower part of the body is white or yellowish white, marked from the head downwards with longitudinal black streaks; the wings and lower tail-covers are beautiful rust red; the beard is very plainly indicated; the eye is dark brown, the naked ring by which the latter is surrounded, the cere, and feet are yellow; the beak is dark blue at its tip, and of a lighter shade towards its base. In the plumage of the young birds the blueish-black feathers that cover the back are bordered with reddish yellow; the light spot upon the nape is larger than in the adult, and of a yellow colour; the lower part of the body whitish yellow, marked with long black streaks; the wings, lower wing-covers, and clothing of the legs are yellowish, the feathers of which the latter are formed having black shafts.

This species inhabits the whole continent of Europe and the cooler portions of Asia; it also visits India in large numbers during the winter, but is rarely seen in Northern Africa. Eversmann tells us that it is found in great numbers in the country near the Ural Mountains. In the central portion of our continent it usually makes its home amongst the trees of the open country, rarely visiting the forests, except during the course of its migrations; in these countries it is a summer guest, leaving about September or October, and returning in April. The flight of the Tree Falcon is extremely rapid, and bears some resemblance to that of the Swallow; the wings are held somewhat arched, and their stroke is short and quick; its evolutions through the air are often extremely beautiful, and are characterised by light and graceful gyrations as it rises aloft or sinks rapidly to the ground. The Tree Falcon, as its name suggests, usually prefers to perch upon trees, and but rarely seeks the ground, except when engaged in devouring its prey. The migratory season commences in autumn, and during their journeyings the pairs keep together with the utmost constancy, in spite of the many fights and squabbles that arise amongst the members of the party. The voice of this bird is clear and not unpleasing, though it consists but of a single note. In its habits it is extremely intelligent, and so very shy and cautious that it only ventures to yield to sleep when the darkness of night has fully closed in.

Field Larks appear to be the favourite food of the Tree Falcon, though it by no means objects to other birds—indeed, it is regarded as a formidable enemy even by the most rapid of the Swallow tribe. Naumann tells us that an instance came under his own observation in which a Swallow was so terrified at the appearance of one of these redoubtable enemies that it fell as though dead to the ground, and only ventured to open its eyes and give signs of life some little time after he had taken it in his hand. Occasionally, if hotly pursued and other means of escape appear impossible, Larks will seek refuge and hide themselves near the protecting feet of the ploughman or of horses, as they wend their way about the fields. Swallows endeavour to save themselves by uniting into flocks, and whirling at a respectful distance above the heads of their dread pursuers. The Tree Falcons will also catch insects when upon the wing, and devour large numbers of grasshoppers, dragon-flies, and ants during the whole time that the latter are engaged in swarming.

The eyrie is usually built upon a high tree, and resembles those of other Falcons as regards its exterior, but the interior is lined with wool, hair, or some other soft and elastic material. The eggs are laid in July, and are from three to five in number, and of a greyish white or greenish colour, covered with light reddish-brown spots, which are most thickly distributed over the broad end. Lenz tells us that one Tree Falcon will destroy no fewer than 1,095 small birds annually. This species was formerly trained for hunting purposes, and is, when domesticated, one of the most intelligent and docile of its family.

THE BERIGORA.

The BERIGORA (*Jeracidea Berigora*) is the most remarkable among the many birds of prey inhabiting New Holland, and constitutes, as it were, a connecting link between the Noble Falcons and the next group. The Berigora possesses the general shape and beak of the Falcons already described, but is distinguished from them by the inferior strength of its wings, in which the third quill is longer than the rest, as well as by the length and slender formation of the tarsi, and toes furnished with claws of no great strength. The length of the male is about sixteen inches, the female is somewhat larger, but exactly resembles her mate in the colour of her plumage. The feathers upon the top of the head are reddish brown, with fine black streaks upon the shafts; the middle of the back is reddish brown, the shoulders, wing-covers, and tail-feathers are brown, edged and spotted with a reddish shade; the throat, breast, middle of the belly, and lower wing-covers are pale fawn colour, with a delicate brown line passing along each side of the shaft; the feathers that cover the sides are reddish brown, surrounded by a border of yellowish-white spots; the hose are brown, spotted with red; the secondary quills are blackish brown, marked upon the inner web with large fawn-coloured patches. The cere and eye-rings are light blue, the beak lead colour at its base and black at the tip; the eyes are of very deep brown.

The Berigora is met with throughout the whole of Van Diemen's Land and New South Wales, where it lives in large flocks, except during the period of incubation, when each pair dwells apart from the rest. The food of this species consists principally of reptiles and insects, but it will also devour small birds and quadrupeds, and by no means despises carrion. The settlers regard these birds with great disfavour, on account of the number of young Chickens they manage to abstract from the farm-yards, and seem entirely to overlook the many and great services they render by the destruction of enormous numbers of insects and caterpillars. The eyrie is built near the summit of the highest gum-trees, and the eggs, which are laid about October and November, differ so considerably in their hues that two of a brood are seldom alike; various shades of whitish fawn-colour, spotted with pale reddish brown, usually predominate.

The KESTRELS (*Tinnunculus*) form a group that stands next in order to the True Falcons, from which they are distinguished by the inferiority of their destructive powers. They all resemble their more highly gifted brethren in their general form, as well as in the structure of the beak, wings, and tail, but are recognisable by their lax and streaming plumage, the comparative weakness of the quills that form the wings, the length of the tail, their strong and short-toed feet, and, lastly, by the difference in the colour of their feathers, which varies with the sex.

THE LARK KESTREL.

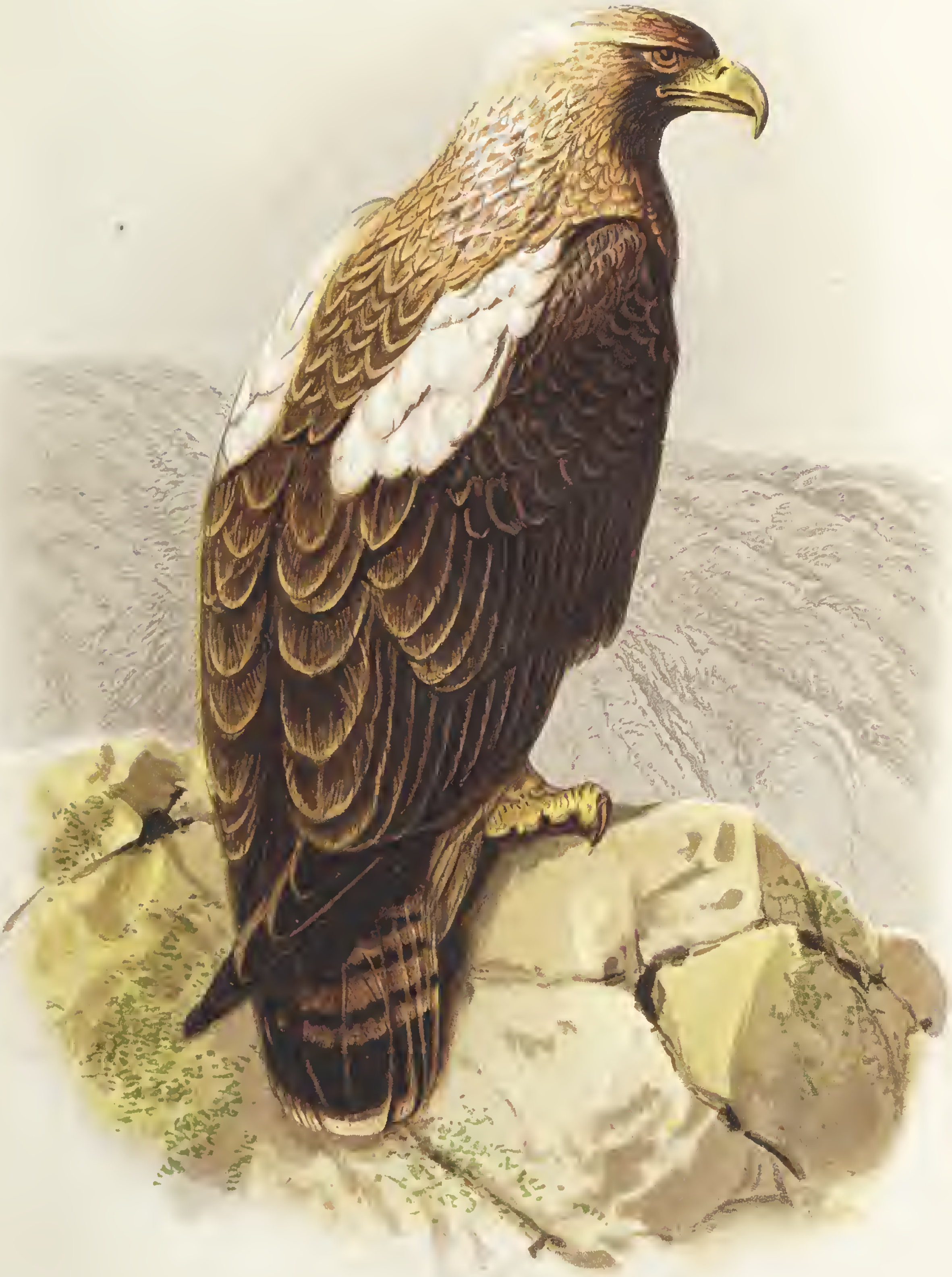
THE LARK KESTREL (*Tinnunculus alaudarius.*)

The LARK KESTREL (*Tinnunculus alaudarius*) is a very handsome bird, about twelve and a half inches long, and twenty-seven broad; the wing measures nine inches and a quarter, and the tail six inches and a quarter. The feathers upon the head, nape, and tail of the male are grey, terminating in a blueish-black patch, bordered with white; the mantle is of a beautiful yellowish red, each feather being tipped with a triangular spot; the throat is whitish yellow, the breast and belly reddish grey or pale yellow, streaked longitudinally with black; the wing-feathers are black, marked with from six to twelve triangular white or reddish spots upon the inner web, and have a light border towards the tip; the pupil of the eye is dark brown, the beak greyish brown, the cere and bare places round the eyes are greenish yellow, and the feet lemon colour. The cheeks are ornamented by a very distinct streak. In the female the upper part of the body, as far as the top of the back, is of the hue of red chalk, marked with longitudinal black marks; the feathers on the back are ornamented with irregular spots, the tail is greyish red, with broad and narrow stripes, and the rump is grey. The colours upon the lower parts of the body are the same as those of the male. The plumage of the young birds resembles that of the mother.

This species is found throughout the whole of Europe, especially frequenting mountainous districts; it is most numerous in the southern countries of our continent, where it is considered as a summer bird, and whence it migrates as winter approaches. It usually frequents lofty trees, old ruins, and rocks, where it constructs its eyrie. The nest externally resembles those of its congeners, but is lined with roots, stubble, moss, and the hair of various animals. The brood consists of from four to seven round eggs, of a white or reddish-yellow colour, spotted with brownish red. The care of hatching the young family devolves entirely upon the female parent, who feeds her charge principally with mice and insects; they will also eat lizards, frogs, or young birds.

THE KESTREL.

The KESTREL (*Tinnunculus cenchris*) is a species very similar to the bird above described, and likewise inhabits the southern countries of Europe. The male is twelve inches long and twenty-



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THE IMPERIAL EAGLE. — Aquila imperialis.

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six inches broad; the wing measures ten inches and the tail five and a half. The body of the female is somewhat larger than that of her mate, being thirteen inches long, and twenty-eight across the span of the wings. The plumage of the male bird is of a blueish grey upon the head, large wing-covers, posterior quills, and tail; the back is brick red, the feathers upon the breast yellowish red, marked with very small, often scarcely perceptible, spots; the tail is tipped with black. The eyes are dark brown, the beak light brown, and the feet lemon colour; the claws are yellowish white. The female closely resembles the female Lark Kestrel in appearance, but is paler in colour, and, moreover, recognisable by its whitish-blue tail and white claws. The young are like the mother.

THE RED-FOOTED OR EVENING FALCON (*Erythropus vespertinus*).

Spain and the neighbouring islands, Malta, South Italy, and particularly Greece, together with some of the countries lying still farther east, form the habitat of these birds; they are also very common upon some of the Russian steppes, but are rarely met with in mountainous districts. Such lowland regions as are in the immediate neighbourhood of water afford them the retreats they prefer, as there they find that unfailing supply of insect nourishment upon which they almost entirely rely. This species appears in Greece at the end of March, and migrates about the end of September. The eggs are usually laid at the bottom of some old wall or in the roofs of houses, whether the latter are inhabited or not. The brood consists of from four to six eggs, closely resembling those of the species last mentioned, but rather smaller (see Coloured Plate IV., Fig. 19). During the period of incubation the parents are often so intent on their duties that they will allow themselves to be captured by hand. The flight of the Kestrels is light and rapid, but far inferior to that of the True Falcon; occasionally they will soar high into the air, but usually fly at no great distance from the earth; when about to seize their prey, they hover before descending, performing the latter movement with considerable celerity. Whilst perching, the plumage is allowed to droop carelessly, and thus gives the bird the appearance of being larger than is actually the case. Upon the ground they have the advantage over the True Falcons, as the greater length of the tarsi renders their movements light and easy.

As regards the perfection of their senses they are by no means behind their more powerful kindred, though they differ from the latter considerably in disposition, being extremely lively and bold. Above all things they seem to delight in tormenting birds much larger than themselves; they pursue the most formidable amongst the many tyrants of the air without the slightest fear, and persecute and annoy the Screech Owl incessantly; they will often confront even man himself with great spirit and determination, and in some countries live upon the most friendly terms with the inhabitants of the houses in the thatch of which they lay their eggs. Their cry is a clear cheerful note, which varies in its sound according to the feeling it is intended to express. When caged they may be rendered extremely tame, so that they may be permitted to fly in and out, and will come at their master's call.

The Kestrels usually leave their sleeping-places very early in the morning, and continue to sweep over the face of the country long after the shades of evening have closed in. When about to migrate they assemble in large flocks, which remain associated until they return in the spring. Jerdon tells us that both species are regular visitors to Southern Asia, and we ourselves have seen great swarms of them in Central Africa during the months that form our cold season. Districts abounding in locusts are generally preferred as winter quarters, such localities affording an inexhaustible supply of food; indeed, those who have never seen an army of locusts can form no adequate idea of the immense numbers in which they are often met with; whole tracts of woodland are completely covered by them, and their hosts darken the air whenever they are roused from their work of devastation. To the Kestrels these swarms furnish a rich field for exertion and active enjoyment; perched upon the highest branches of the mimosa, they await the moment when the locusts take wing, and then dart upon their prey; in vain the insect endeavours to free itself by biting the enemy's foot; the powerful antagonist makes short work of its struggles by crushing the head; the wings and feet are then torn off, and devoured while the bird hovers in the air. We have often amused ourselves by shaking the trees or bushes, and thus rousing the locusts, in order to enjoy the pleasure of seeing the dexterity displayed by the Kestrels during these onslaughts; for, strange to say, the insects appeared fully to understand their danger, and used all possible means to avoid their evidently dreaded enemies.

THE RED-FOOTED OR EVENING FALCON.

The Red-footed or Evening Falcon (*Erythropus vespertinus*), one of the most beautiful members of this group, inhabits Southern Europe. It is distinguished from the Kestrels by the comparative shortness of its beak and tail, and by the great variety observable in the plumage, which differs not only with the sex but according to the age of the bird. The male of this species is about twelve inches long and thirty inches broad; the tail measures about five inches. The female is one inch and a half longer and two inches broader than her mate. When the male is in its full beauty the middle of the belly, hose, and under tail-covers are of a bright rust red, the rest of the plumage being of an uniform slate colour, the tail somewhat darker in hue than the other feathers. The cere, the bare place round the eyes, and the feet are brick red; the beak is yellow at its base and greyish blue towards the tip. The head and nape of the female are light rust red, the rest of the body blueish grey, striped with a darker shade upon the mantle and tail; the beard is brown, but with this exception, the front of the throat and sides of the neck are entirely white; the lower parts of the body are reddish, some of the shafts of the feathers being streaked with brown; the cere, eye-rings, and feet are orange. In the young birds the upper part of the body is dark brown, having every feather bordered with reddish yellow; the tail is of the latter colour, and marked with eleven or twelve dark streaks; the belly is reddish white, and the bare spots are lighter than in the female; the pupil of the eye is invariably brown.

The Red-footed Falcon inhabits the South-eastern parts of Europe and Central Asia, and is but rarely seen in the western countries of our continent; the extensive steppes of Hungary, Russia, and Asia must be regarded as its actual habitat, and from these tracts it migrates about August or September to India (it seldom visits either Egypt or Africa), and returns to Europe early in the spring. So closely does this species resemble the Kestrel in its movements, that when seen flying or perching it is extremely difficult to distinguish the one from the other, and the sound of their voices is almost identical; but when upon the ground the Red-footed Falcon is more active than the Kestrel; it lives almost entirely upon insects, and devours enormous numbers of grasshoppers, butterflies, beetles, and dragon-flies, usually capturing its prey when upon the wing. The eggs, four or five in number, are laid about May; they are small and round, with a very thin, yellow shell, marked with various spots of dark and light reddish brown. It is no uncommon circumstance for a pair of these Falcons to seize upon a Magpie's nest; and as the owner is generally not inclined to resign possession quietly, but calls loudly to its companions for assistance, long and severe are the battles that ensue. The young leave the nest about April, and are carefully trained in the art of obtaining prey by their parents until such time as the flock migrates. These birds are easily tamed, and cannot fail to attract attention by their beauty and the affection with which they regard those who show them kindness.

THE SPARROW FALCON.

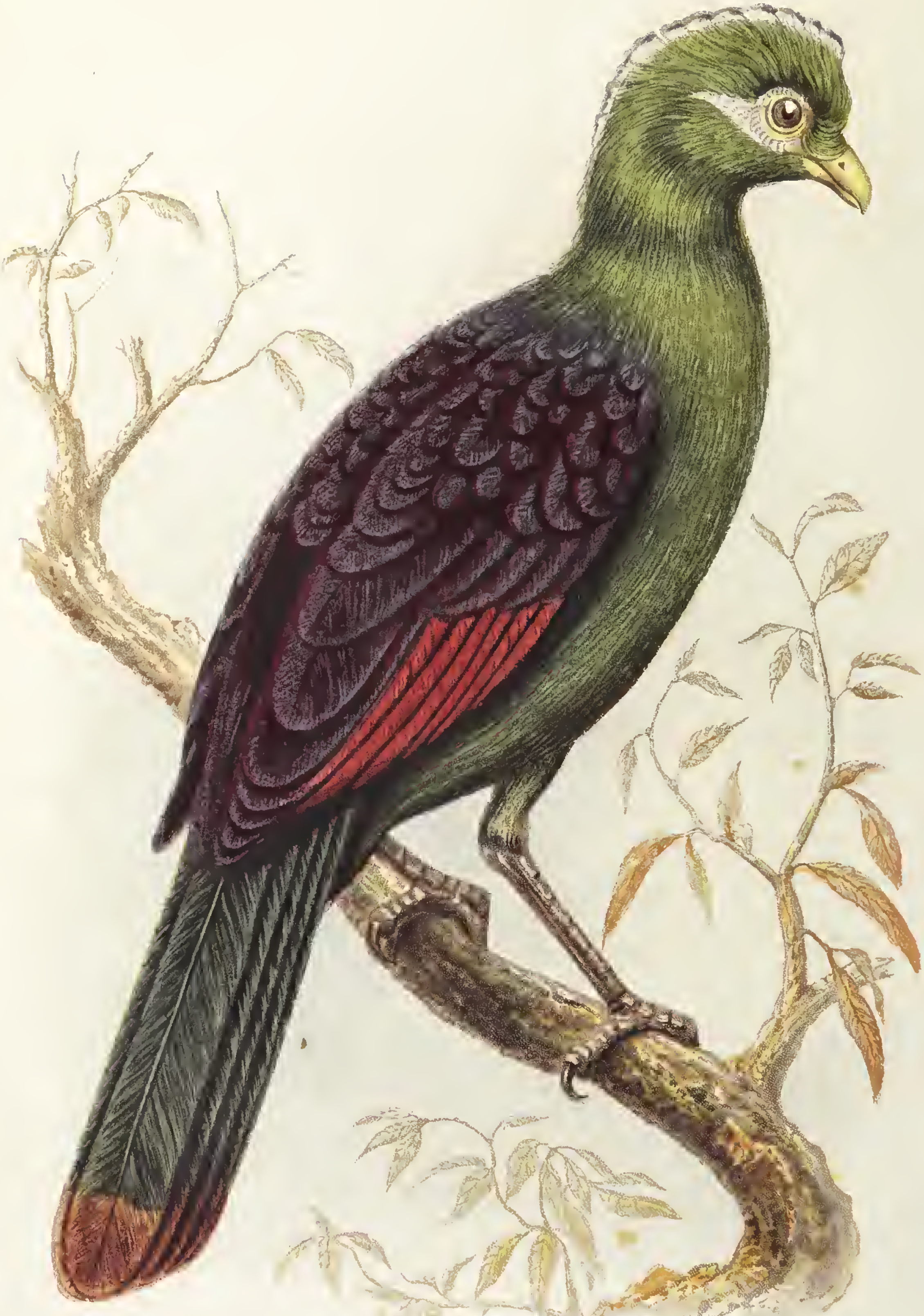
The **Sparrow Falcon** (*Rhynchodon sparverius*) is a well-known member of this group, inhabiting the entire continent of America. This species varies so remarkably in its plumage as to render description almost impossible; indeed, it would be difficult to find two specimens completely alike in their colours. Suffice it, therefore, to say that the feathers upon the back are usually reddish brown, striped with black; the outer web of the quills is black, the two exterior quills being bordered with white, and the rest spotted with white towards the root; the inner web is tipped with white and marked with conical black and white spots, which run one into the other. The eyes, cere, and feet are yellow, the beak is tipped with blackish blue, whilst the middle portion is whitish blue and the base yellow. This species measures about nine inches ten lines in length, and is about twenty inches broad; the wing measures six inches nine lines, and the tail about four inches. The female is an inch longer and two inches broader than her mate. Some naturalists consider that the species found in North and South America are different, but in this opinion we do not concur.

Our readers will form an accurate idea of the Sparrow Falcon if we describe it as a very powerful and courageous Kestrel, which subsists not merely upon insects or small quadrupeds, but will grapple with the largest of its own formidable race. Tschudi tells us that it pounces upon an adversary five times as large as itself, and despite all efforts to dislodge it, succeeds in overcoming its prey. Naturalists differ as to the situations preferred as breeding-places, some affirming that the eyrie is found in holes of trees, and that the brood consists of from five to seven eggs; whilst Tschudi, on the contrary, tells us that the nest is placed upon rocks or old buildings, and that not more than two or three eggs are laid; these are round, of a white or reddish yellow tint, and spotted with brownish red. At the approach of winter the greater number of these birds migrate to Brazil; some few stragglers, however, remain throughout the year in their native country.

The DWARF FALCONS (*Hierax*), the smallest members of the Falcon group are met with in Southern Asia; they do not exceed a Lark in size, but are as courageous and bold as the largest of their marauding fraternity; they are recognisable by their short powerful beak, the upper mandible of which is toothed, and furnished on each side with a projecting appendage; by their short wings, of which the second and third quills are longer than the rest; and by their very short tail, cut straight at its tip; the tarsi are short and strong, the middle toe slightly elongated, and the claws very powerful. These elegant little Falcons, which from their appearance have been compared to small Parrots, are inhabitants of India and the Moluccas, no less than six different species having been described as belonging to those parts.

THE MUTI.

The Muti (*Hierax cœrulescens*) is about seven inches long; the wing measures three and a half inches, and the tail two inches and a quarter. The top of the head, nape, tail, and the long silky feathers that form the hose are of a blueish black; the face, part of the head, throat, breast, and a stripe which passes from the corner of the beak to the shoulder are reddish white; the belly is rust red; the tail is ornamented with round white spots, which form four delicate borders, and the wings are adorned in a similar manner. The eye is dark brown, the beak and feet blueish black. This species is found throughout the whole of Southern Asia, and is extensively employed by the inhabitants of the countries it frequents in the pursuit of quails and other birds of considerable size. When used for this purpose the falconer carries the Muti in the palm of his hand, and tosses it like a stone into the air towards its intended prey; it is from this circumstance that the species has received its Indian name, the word "Muti" signifying a handful. Nothing can exceed the boldness displayed by this small Falcon during the chase; it will attack birds much larger than itself with unflinching courage, rushing down upon them after the manner of a Hawk.



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CASSELL'S
BOOK OF BIRDS.

FROM THE TEXT OF DR. BREHM.

BY

THOMAS RYMER JONES, F.R.S.,

PROFESSOR OF NATURAL HISTORY AND COMPARATIVE ANATOMY IN KING'S COLLEGE, LONDON.

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CONTENTS.

PAGE

CATCHERS (*Captantes*).—*Continued.*

The Hawks (*Accipiter*) :—The Laughing Hawk—The Double-toothed Hawk—The Sparrow Hawk—The True Hawk, or Gos Hawk. The Singing Hawks (*Melierax*) :—The True Singing Hawk—The Serpent Hawk 1–7

RAPTORIAL BIRDS.

The Eagles (*Aquila*) :—The Tawny Eagle—The Golden Eagle—The Imperial Eagle—The Spotted Eagle. The Dwarf Eagles (*Hieraëtos*) :—The Booted Eagle—The Dwarf Eagle. The Wedge-tailed Eagles (*Uroaëtos*) :—The Bold Wedge-tailed Eagle. The Hawk Eagles (*Pseudaëtos*, *Eudolmaëtos*, or *Asturaëtos*) :—Bonelli's Hawk Eagle. The Hooded Eagles (*Spizaëtos*) :—The Martial Hooded Eagle—The Tufted Eagle. The Destroying Eagles (*Pternura*) :—The Urutaurana. The Brazilian Eagles (*Morphnus*) :—The Crested Brazilian Eagle—The Harpy Eagle. The Sea Eagles (*Haliaëtos*) :—The Sea Eagle—The White-headed Sea Eagle—The African Screaming Sea Eagle—The Osprey, River Eagle, or Fish Hawk 7–31

The Kites (*Milvus*) :—The Short-tailed Kite. The Gliding Kites (*Elanus*) :—The True Gliding Kite. The Hovering Kites (*Ictinia*) :—The Mississippi Kite. The Crooked-billed Kites (*Cymindis*) :—The Buzzard Kite—The Syama or Baza 31–37

The True Kites :—The Black Kite—The Govinda—The Parasite Kite—The Red or Royal Kite—The Swallow-tailed Kite. The Chelidopteri :—The Dwarf Swallow-tailed Kite. The Field Kites, or Harriers (*Circus*). The Meadow Kites (*Strigiceps*) :—The Blue Kite or Hen Harrier—The Kite of the Steppes, or Pallid Harrier—The Meadow Kite, or Ash-coloured Harrier—The Reed Kite, or Marsh Harrier. Spotted Kites (*Spilocircus*) :—Jardine's Spotted Kite 37–47

The Buzzards (*Buteo*). The Snake Buzzards (*Circaëtos*) :—The Snake Buzzard. The Crested Buzzards (*Spilornis*) :—The Bacha—The Honey Buzzard, or Wasp Kite—The Crested Honey Buzzard—The Rough-legged Buzzard—The Common or Mouse Buzzard—The Red-winged or Grasshopper Buzzard—The Tesa—The Caracolero, Snail Buzzard, or Hook-beaked Buzzard—The Urubitinga 47–56

The Vulture Falcons (*Polyborus*) :—The Chimango—The Vulture Buzzard—The Carancho or Traro. Screaming Buzzards (*Ibicter*) :—The Ganga—The Secretary or Crane Vulture 56–64

The Vultures (*Vulturidæ*) :—The Bearded Vulture. The True Vultures (*Vultur*). The Condors, or Wattled Vultures (*Sarcorhamphus*) :—The Condor—The Californian Condor—The King of the Vultures. The Goose Vultures (*Gyps*) :—The Tawny Goose Vulture—The Sparrow-hawk Goose Vulture. The Crested Vultures :—The Cowled Vulture—The Variegated or Crested Vulture. The Eared Vultures (*Otogyps*). The Raven Vultures (*Catharta*) :—The Scavenger or Egyptian Raven Vulture—The Monk Vulture—The Urubu or Turkey Buzzard—The Gallinazo 64–84

PAGE

THE OWLS (*Striginæ*).

THE DAY OWLS (*Surnia*) :—The Sparrow-hawk Owl—The Snow Owl. The STONE OWLS (*Athene*) :—The Stone Owl Proper. The BURROWING OWLS (*Pholeoptynx*):—The Brazilian or Rabbit Owl—The Prairie Owl. The SPARROW OWLS (*Microptynx*) :—The European Sparrow Owl. The EARED OWLS, or UHUS (*Bubo*) :—The Uhu—The Short-eared Uhu—The Milk-white Uhu—The Virginian Uhu—The Brown Fish Owl—The Woodland Owl—The Marsh Owl. The DWARF EARED OWLS (*Scops*) :—The Dwarf Eared Owl 84–99

THE NOCTURNAL OWLS :—The Tree Owl—The Hairy-footed Owl. The VEILED OWLS (*Strix*) :—Kirchhoff's Veiled Owl—The Flame Owl, or Barn Owl 99–103

THE GAPERS (*Hiantes*).

THE SWALLOWS (*Hirundo*). The TRUE SWALLOWS (*Cecropis*) :—The Chimney Swallow—The Senegal Swallow—The Thread-tailed Swallow—the Martin or Roof Swallow 104–111

THE MOUNTAIN or SHORE SWALLOWS (*Cotyle*) :—The Rock Swallow—The Sand Martin—The Ariel Swallow. The WOOD SWALLOWS (*Atticora*) :—The Striped Wood Swallow. The SAILOR SWALLOWS (*Progne*) :—The Purple Swallow 111–115

THE SWIFTS (*Cypselus*). The TREE SWIFTS (*Dendrochelidon*) :—The Klecho. The SALANGANES (*Collocalia*) :—The Salangane Proper—The Kusappi. The PRICKLY-TAILED SWIFTS (*Acanthylis*) :—The White-throated Prickly-tailed Swift—The Dwarf Swift—The Palm-tree Swift—The Steeple Swift—The Alpine Swift 115–124

THE NIGHT JARS, or GOATSUCKERS (*Caprimulgus*) :—The Nacunda. The TWILIGHT NIGHT JARS (*Chordeiles*) :—The Night Falcon—The Common Goatsucker—The Resplendent Goatsucker. The BRISTLED NIGHT JARS (*Antrostomus*) :—The Whip-poor-Will. The AFRICAN NIGHT JARS (*Scotornis*). The LYRE-TAILED NIGHT JARS (*Hydropsalis*) :—The Lyre-tailed Night Jar. MACRODIPTERYX :—The Long-winged Macrodipteryx—The Streamer-bearing Night Jar, or "Four Wings." The GIANT GOATSUCKERS (*Nyctibius*) :—The Ibijau, or Earth-eater—The Guachero, or Oil Bird. The OWL SWALLOWS (*Podargus*) :—The DWARF OWL SWALLOWS (*Ægotheles*) :—The True Dwarf Owl Swallow. The GIANT OWL SWALLOWS (*Podargus*) :—The Giant Owl Swallow. The FROG-MOUTHS (*Batrachostomus*) :—The Plumed Frog-mouth 124–140

THE SINGING BIRDS (*Oscines*).

THE TOOTH-BEAKED SINGING BIRDS (*Dentirostres*). The SHRIKES (*Lanius*) :—The Sentinel Butcher Bird, or Great Grey Shrike—The Southern Shrike—The Grey, or Black-browed Shrike. The BUTCHER BIRDS PROPER (*Enneoctonus*) :—The Red-backed Shrike, or True Butcher Bird—The Red-headed Shrike, or Wood Chat—The Masked Shrike. The THICK-HEADED SHRIKES (*Pachycephalus*) :—The Falcon Shrike. The BUSH SHRIKES (*Malaconotus*). The FLUTE-VOICED SHRIKES (*Laniarius*) :—The Scarlet Shrike—The Flute Shrike. The HOODED SHRIKES :—The Tschagra—The Helmet Shrike. The CROW SHRIKES (*Cracticus*) :—The Magpie Shrike. The RAVEN SHRIKES (*Thamnophilus*) :—Vigors' Raven Shrike. The DRONGO SHRIKES (*Edolius*) :—The King Crow, or Finga. The DRONGOS (*Chaptia*) :—The Singing Drongo. The FLAG-BEARING DRONGOS (*Edolius* or *Dissemurus*) :—The Bee King. The DRONGO SHRIKES. The SWALLOW SHRIKES (*Artamius*) :—The Wood Shallow Shrike . . 140–158

THE SINGING BIRDS (*Oscines*).—*Continued.*

PAGE

THE FLY-CATCHERS. The KING or TYRANT SHRIKES (*Tyrannus*):—The True Tyrant Shrike, King Bird, or Tyrant Fly-catcher—The Bentevi. The FORK-TAILED TYRANTS (*Milvulus*):—The Scissor Bird—The Royal Tyrant. The STILTED FLY-CATCHERS (*Fluvicola*):—The Yiperu, or Yetapa—The Cock-tailed Fly-catcher. The CATERPILLAR EATERS (*Campephaga*):—The Red Bird, or Great Pericrocotus. The FLY-SNAPPERS (*Myiagra*). The PARADISE FLY-CATCHERS:—The Paradise or Royal Fly-snapper. The FANTAILS (*Rhipidura*):—The Wagtail Fantail. The TRUE FLY-CATCHERS (*Muscicapa*):—The Grey or Spotted Fly-catcher. The MOURNING FLY-CATCHERS (*Muscicapa*):—The Black-capped or Pied Fly-catcher—The Collared or White-necked Fly-catcher—The Dwarf Fly-catcher. The SILK-TAILS (*Bombycilla*):—The European, or Common Silk-tail, Bohemian Chatterer, or Wax-wing . . . 158-174

THE MANAKINS (*Pipra*). The ROCK BIRDS (*Rupicola*):—The Cock of the Rock. The TRUE MANAKINS (*Pipra*). The LONG-TAILED MANAKINS (*Chiroxiphia*):—The Long-tailed Manakin—The Tije—The Black-cap Manakin. The PANTHER BIRDS (*Pardalotus*):—The Diamond Bird. The BALD-HEADED CROWS (*Gymnoderus*):—The Capuchin Bird, or Bald Fruit Crow—The Umbrella Bird, or Umbrella Chatterer. The BELL BIRDS (*Chasmarhynchus*):—The Bare-necked Bell Bird—The Araponga—The True Bell Bird—The Three-wattled Bell Bird, or Hammerer. The THRUSHES (*Turdidæ*). The GROUND SINGERS (*Humicola*) 174-185

THE NIGHTINGALES (*Luscinia*):—The Nightingale. The HEDGE SINGERS, or TREE NIGHTINGALES (*Aëaon* or *Agrobates*):—The Tree Nightingale. The BLUE-THROATED WARBLERS (*Cyanecula*):—Swedish Blue-throat—White-starred Blue-throat. The RUBY NIGHTINGALES (*Calliope*):—The Calliope of Kamschatka. The Robin Redbreast 186-193

THE WARBLERS (*Monticola*). The REDSTARTS (*Ruticilla*):—The Black-capped Redstart—The Garden Redstart. The MEADOW WARBLERS (*Pratincola*):—The Brown-throated Meadow Warbler—The Black-throated Meadow Warbler. The CLIPPERS (*Ephthianura*):—The Wagtail Clipper. The CHATS (*Saxicola*):—The Fallow Chat, or Wheatear—The Eared Stone Chat and Black-throated Stone Chat. The RUNNING WARBLERS (*Dromolæa*):—The White-tailed Wheatear. The STONE THRUSHES, or ROCK WAGTAILS (*Petrocincla*):—The Stone Thrush, or Rock Wagtail—The Blue Rock Wagtail, or Blue Thrush—The Bush Warbler 193-204

THE THRUSHES (*Turdus*):—The Red-winged Thrush—The Red-throated Thrush—The Pale Thrush—The Siberian Thrush—The Wandering Thrush—The Hermit Thrush—Wilson's Thrush—Swainson's Thrush—Dwarf Thrush—The Soft-feathered Thrush—The Black-throated Thrush—The Ground Thrush—The Missel Thrush—The Song Thrush—The Fieldfare, or Juniper Thrush—The Redwing—The Ring Ouzel, or Ring Thrush—The Blackbird, Black Thrush, or Merle. The MOCKING THRUSHES (*Mimus*):—The Mimic Thrush, or Mocking Bird—The Ferruginous Mocking Bird, or Thrasher—The Cat Bird. The BABBLERS, or NOISY THRUSHES (*Timalia*):—The Grey Bird—Le Vaillant's Grey Bird. The TRUE BABBLERS (*Timalia*):—The Red-headed Babbler. The HOOK-CLAWED BABBLERS (*Cratcropus*):—The White-rumped Babbler. The LAUGHING THRUSHES (*Garrulax*):—The White-tufted Laughing Thrush 204-223

THE WATER OUZELS (*Cinclus*):—The Water Ouzel, or Dipper—The American Water Ouzel. The PITTAS, or PAINTED THRUSHES (*Pitta*):—The Nurang—The Pulih—The Noisy Pitta—The ANT THRUSHES (*Myiothera*):—The Fire Eye—The Ant King—The Tapacolo or Tualo 223-232

THE LYRE BIRD (*Menura superba*) 232-237

THE SINGING BIRDS (*Oscines*).—*Continued.*

PAGE

THE WARBLERS (*Sylvia*). The SONG WARBLERS (*Sylvia*). The TRUE SONG WARBLERS (*Curruca*) :—The Sparrow-hawk Warbler—The Orpheus Warbler—The Greater Pettichaps, or Garden Warbler—The Lesser Whitethroat—The Capirote, or Black-cap—The White Throat—The Spectacled Warbler—The White-bearded Warbler—The Fire-eyed Warbler—Rüppell's Warbler—The Black-headed Fire-eyed Warbler—The Sardinian Fire-eyed Black-head—The Provence Fire-eyed Warbler, or Dartford Warbler. The TREE WARBLERS (*Phylloscopus*) :—The Field Tree Warbler, or Willow Wren. The LEAF WRENS (*Reguloides*) :—The Leaf Wren. The GARDEN WARBLERS (*Hypolais*) :—The Melodious Willow Wren—The Chiff-Chaff—The Ashy Garden Warbler. The MARSH WARBLERS (*Calamodytæ*). The REED WARBLERS (*Acrocephalus*) :—The True Reed Warbler. The SEDGE WARBLERS (*Calamodus*) :—The Sedge Warbler. The GRASSHOPPER WARBLERS (*Locustella*) :—The Grasshopper Warbler. The BUSH WARBLERS (*Drymoica*) :—The Pinc-Pinc. The TAILOR BIRDS (*Orthotomus*) :—The Long-tailed Tailor Bird—The Emu Wren 237–269

THE WRENS (*Troglodytæ*) :—The Common Wren. The MARSH WRENS (*Thryothorus*) :—The Carolina Wren—The House Wren—The Flute-player 269–274

THE PIPITS (*Anthus*) :—The Meadow Pipit, or Meadow Titling—The Tree Pipit—The Rock Pipit, Shore Pipit, or Sea Titling—The Stone Pipit, or Fallow-land Pipit. The SPURRED PIPITS (*Corydalla*) :—Richard's Spurred Pipit 274–282

THE WAGTAILS (*Motacilla*) :—The White Wagtail—The Pied Wagtail—The Dhobin—The Rock Wagtail—The Mountain Wagtail. The SHEEP WAGTAILS (*Budytes*) :—The Cow or Meadow Wagtail—Ray's Wagtail—The Velvet-headed or Sheep Wagtail—The Yellow-headed Wagtail—The Gomarita, or Garden Wagtail. The SWALLOW WAGTAILS (*Enicurus*) :—The MENINTING 282–292

THE ACCENTORS (*Accentor*). The HEDGE SPARROWS, or HEDGE WARBLERS (*Tharraleus*, or *Accentor*) :—The Hedge Sparrow, or Hedge Warbler—The Siberian Accentor—The Alpine Accentor 292–296

THE TITS (*Parus*). The CRESTED WRENS or KINGLETS (*Regulus*) :—The Golden-crested Wren—The Dalmatian Wren—The Fire-crested Wren—The Satrap Crowned Wren—The Ruby Crowned Wren. The PENDULINE TITMICE (*Ægithalus*) :—The True Penduline Titmouse. The REED TITMICE (*Panurus*) :—The Bearded Titmouse. The LONG-TAILED TITS (*Orites*) :—The Long-tailed Titmouse. The CRESTED TITS (*Lophophanes*) :—The Crested Tit—The Toupet Tit. The WOOD TITS (*Parus*):—The Great Tit—The Sombre Tit—The Cole Tit. The BLUE TITS :—The Blue Tit—The Azure Tit—The Siberian Tit—The Marsh Tit—The Carolina Titmouse—The Black-cap Titmouse 296–320

LIST OF ILLUSTRATIONS.

COLOURED PLATES.

PLATE XI.—THE ANGOLA VULTURE.
,, XII.—THE JAVA OWL.
,, XIII.—THE TAWNY GOATSUCKER.
,, XIV.—THE RED-BACKED SHRIKE.
,, XV.—THE PURPLE-CRESTED CORYTHAIX.
PLATE XVI.—EGGS.
,, XVII.—EGGS.
,, XVIII.—THE NIGHTINGALE.
,, XIX.—THE AZURE PITTA.
,, XX.—THE ORONOKO CORACINA.

WOOD ENGRAVINGS.

FIG. PAGE
1. The Gos Hawk (*Astur palumbarius*) 4
2. Eagles 8
3. The Golden Eagle (*Aquila chrysaëtos*) 12
4. The Imperial Eagle (*Aquila imperialis*) 13
5. Bold Wedge-tailed Eagles (*Uroaëtos audax*) 16
6. The Tufted Eagle (*Lophoaëtos occipitalis*) 20
7. The Harpy Eagle (*Harpyia destructor*) 24
8. The Sea Eagle (*Haliaëtos albicilla*) 25
9. The White-headed Sea Eagle (*Haliaëtos leucocephalus*) 28
10. The African Screaming Sea Eagle (*Haliaëtos vocifer*) 29
11. The Short-tailed Kite (*Helotarsus ecaudatus*) 33
12. The Parasite Kite (*Hydroictinia parasitica*) 40
13. The Red or Royal Kite (*Milvus regalis*) 41
14. The Swallow-tailed Kite (*Nauclerus furcatus*) 42
15. The Reed Kite or Marsh Harrier (*Circus rufus*) 45
16. The Snake Buzzard (*Circaëtos brachydactylus*, or *Circaëtos Gallicus*) 48
17. The Common or Mouse Buzzard (*Buteo vulgaris*) 53
18. The Carancho or Traro (*Polyborus vulgaris* or *Brasiliensis*) 60
19. Track across the Pampas 61
20. The Secretary, or Crane Vulture (*Gypogeranus serpentarius*) 64
21. Vultures feasting 65
22. The Bearded Vulture, or Lämmergeier (*Gypaëtos barbatus*) 68
FIG. PAGE
23. The Condor (*Sarcorhamphus gryphus*, or *Sarcorhamphus condor*) 72
24. The King of the Vultures (*Sarcorhamphus papa*) 73
25. The Tawny Goose Vulture (*Gyps fulvus*) 76
26. The Monk Vulture (*Neophron pileatus*) 79
27. African Vultures (*Gyps fulvus*) 80
28. The Scavenger, or Egyptian Vulture (*Percnopterus stercorarius*, or *Neophron Percnopterus*) 81
29. The Urubu (*Cathartes aura*) 83
30. The Snow Owl (*Nyctea nivea*) 88
31. The Stone Owl (*Athene noctua*) 89
32. The Uhu at bay 92
33. The Uhu (*Bubo maximus*) 93
34. The Virginian Uhu (*Bubo Virginianus*) 96
35. The Marsh Owl (*Otus brachyotus*) 97
36. The Tree Owl (*Syrnium aluco*) 100
37. The Barn Owl (*Strix flammea*) 101
38. Tail-piece 103
39. The Chimney Swallow (*Cecropis Hirundo rustica*) 105
40. The Thread-tailed Swallow (*Cecropis Uromitus filifera*) 108
41. The Martin (*Chelidon urbica*) 109
42. The Ariel (*Chelidon Ariel*) 113
43. The Klecho (*Dendrochelidon Klecho*) 116
44. Salanganes 117
45. The White-throated Prickly-tailed Swift (*Acanthylis caudacuta*) 120

FIG. PAGE
46. The Steeple Swift (*Cypselus apus*) 121
47. The European Goatsucker (*Caprimulgus Europæus*) 128
48. The Whip-poor-Will (*Antrostomus vociferus*) . 129
49. The Lyre-tailed Night Jar (*Hydropsalis forcipata*) 130
50. The Oil Bird (*Steatornis Caripensis*) . . 133
51. The True Dwarf Owl Swallow (*Ægotheles Novæ Hollandiæ*) 137
52. The Giant Owl Swallow (*Podargus humeralis*). 139
53. The Sentinel Butcher Bird (*Lanius Excubitor*). 144
54. Butcher Bird and Fly-catchers 145
55. The Falcon Shrike (*Falcunculus frontatus*) . 148
56. The Flute Shrike (*Laniarius Æthiopicus*) . 149
57. The Helmet Shrike (*Prionops poliocephalus*) . 152
58. The Magpie Shrike (*Cracticus destructor*) . 153
59. The True Tyrant Shrike, King Bird, or Tyrant Fly-catcher (*Tyrannus intrepidus*) . . 160
60. The Scissor Bird (*Milvulus tyrannus*) . . 161
61. The Paradise Fly-catchers (*Tersiphone paradisea*) 165
62. The Collared or White-necked Fly-catcher (*Muscicapa albicollis*) 172
63. The Silk-tail, Bohemian Chatterer, or Waxwing (*Bombycilla garrula*) 173
64. The Cock of the Rock (*Rupicola crocea*) . . 176
65. The Diamond Bird (*Pardalotus punctatus*) . 179
66. The Capuchin Bird, or Bald Fruit Crow (*Gymnocephalus calvus*) 180
67. The Umbrella Bird, or Umbrella Chatterer (*Cephalopterus ornatus*) 181
68. The Nightingale (*Luscinia Philomela*) . . 185
69. The Swedish Blue-throat (*Cyanecula Suecica*) . 189
70. The Robin Redbreast (*Erythaca rubecula*, or *Rubecula silvestris*) 192
71. The Garden Redstart (*Ruticilla phœnicura*, or *Phœnicura ruticilla*) 193
72. The Black-throated Meadow Warbler (*Pratincola rubicola*) 196
73. The Wheatear (*Saxicola œnanthe*) . . . 197
74. The Eared Stone Chat (*Saxicola aurita*) . . 200
75. The Stone Thrush, or Rock Wagtail (*Petrocincla Turdus saxatilis*) 201
76. The Bush Warbler (*Thamnolæa albiscapulata*) . 204
77. The Song Thrush (*Turdus musicus*) . . . 208
78. Fieldfares 209
79. The Redwing (*Turdus iliacus*) 210
80. The Blackbird (*Turdus merula*) 212
81. The Mocking Bird (*Mimus polyglottus*) . . 213
82. The Cat Bird (*Galeoscoptes Carolinensis*) . . 217
83. The Grey Bird (*Pycnonotus arsinoë*) . . 219
84. The White-rumped Babbler (*Crateropus leucopygius*) 221
85. The White-tufted Laughing Thrush (*Garrulax leucolophus*) 222
86. Water Ouzels and Kingfisher 224
87. The Water Ouzel, or Dipper (*Cinclus aquaticus*) 225
88. The Tapacolo (*Pteroptochus megapodius*) . . 232
89. The Lyre Bird (*Menura superba*) . . . 233
90. The Sparrow-hawk Warbler (*Curruca nisoria*) 239
91. The Orpheus Warbler (*Curruca Orphea*) . . 241
92. The White Throat (*Curruca cinerea*) . . 245
93. The Spectacled Warbler (*Curruca conspicillata*) 248
94. The Field Tree Warbler, or Willow Wren (*Phyllopneuste Trochilus*) 253
95. The Chiff-Chaff (*Hippolais rufa*) . . . 256
96. The Reed Warbler (*Acrocephalus turdoides*) . 257
97. The Sedge Warbler (*Calamodus phragmitis*) . 260
98. The Long-tailed Tailor Bird (*Orthotomus longicauda*) 265
99. The Emu Wren (*Stipiturus malachurus*) . . 268
100. The Common Wren (*Troglodytes parvulus*) . 269
101. The Tree Pipit (*Anthus arboreus*) . . . 276
102. The Rock Pipit (*Anthus petrosus*) . . . 277
103. The Fallow-land Pipit (*Agrodroma campestris*) 280
104. Wren and Wagtails 281
105. The White Wagtail (*Motacilla alba*) . . 284
106. The Mountain Wagtail (*Calobates sulphurea*) . 288
107. The Meninting (*Enicurus coronatus*) . . 293
108. The Alpine Accentor (*Accentor Alpinus*). . 296
109. The Golden-crested Wren (*Regulus vulgaris*, *flavicapillus*, or *auricapillus*) . . . 300
110. Bearded and Penduline Tits 304
111. The Long-tailed Titmouse (*Orites caudatus*) . 308
112. The Great Tit (*Parus major*) 313

CASSELL'S

BOOK OF BIRDS.

CATCHERS (*Captantes*).—Continued.

THE HAWKS.

THE HAWKS (*Accipitres*) are a group of birds that rival the Falcons in rapacity, but are entirely without those qualities popularly supposed to lend a certain nobility to the murderous propensities of their more favoured relatives.

The HAWKS are recognisable by their compact body, long neck, and small head, their short rounded wings, very long tail, and high tarsi; the toes vary considerably in size. The beak is less vaulted and more compressed at its sides than in the Falcons; the tooth-like appendages are placed further back, and are less distinctly developed, and the bare circle around the eye is entirely wanting. The plumage is thick and soft, usually dark blueish grey above, and of a lighter shade upon the lower parts of the body, the latter being often darkly striped. Old birds of both sexes are alike in plumage, but the young differ considerably from their parents. The members of this family are found throughout the whole world, some species being confined to a comparatively limited extent of country, whilst others are to be met with everywhere. All frequent woods and forests, from whence they sally forth to find their food in the fields and valleys of the surrounding country. Hawks seldom fly to any great altitude; they move with great rapidity, altering their course at once with the utmost facility, and passing in and out among the branches and bushes with the dexterity of a Martin; they run swiftly upon the ground, assisting their progress with their wings. Their eyrie is usually built upon high trees, and is by some species prettily decked with green twigs, which are renewed from time to time. The eggs are numerous, and during the period of incubation the parent birds will fiercely attack even men should they attempt to molest the brood. Some few species have been trained for hunting purposes, but these attempts have almost always proved unsuccessful.

THE LAUGHING HAWK.

The LAUGHING HAWK (*Herpetotheres cachinnans*) is a South American bird, to which we have assigned the first place, inasmuch as in some respects it resembles the Falcons; the name it bears has been given to it on account of the very peculiar sound of its loud and resonant voice. Its distinguishing characteristics are its comparatively large head, which is profusely covered with feathers, and the robust development of the hinder parts of its body. The wings when closed reach to the middle of the tail, their primaries are narrow and pointed, the third and fourth quills being longer than the rest; the tail is long, the exterior feathers somewhat shortened; the tarsi are of moderate height and strength, the toes small, and the claws remarkably short and thick; the beak is short, much compressed at its sides, and terminates in a short hook; the lower mandible is shallow, and bifurcated at its tip; the region of the eye is bare, and the body covered with long-pointed and strong-shafted feathers. In size the Laughing Hawk resembles its European congeners; the plumage is pale yellow from the top of the head to the nape, each feather having a black shaft; the bridles, nape, and cheeks are black, the mantle brown, the feathers being bordered with a lighter shade; the entire lower portion of the body and a stripe upon the neck are white, which changes into red upon the breast and legs; the upper part of the tail is black, its under portion whitish yellow, tipped with white and ornamented with six or seven grey stripes; the inner web of the brown quills which form the wings is shaded from reddish yellow to white, and edged with a delicate irregular brown line; the eye is reddish yellow, the beak black, the cere and legs are yellow.

THE DOUBLE-TOOTHED HAWK.

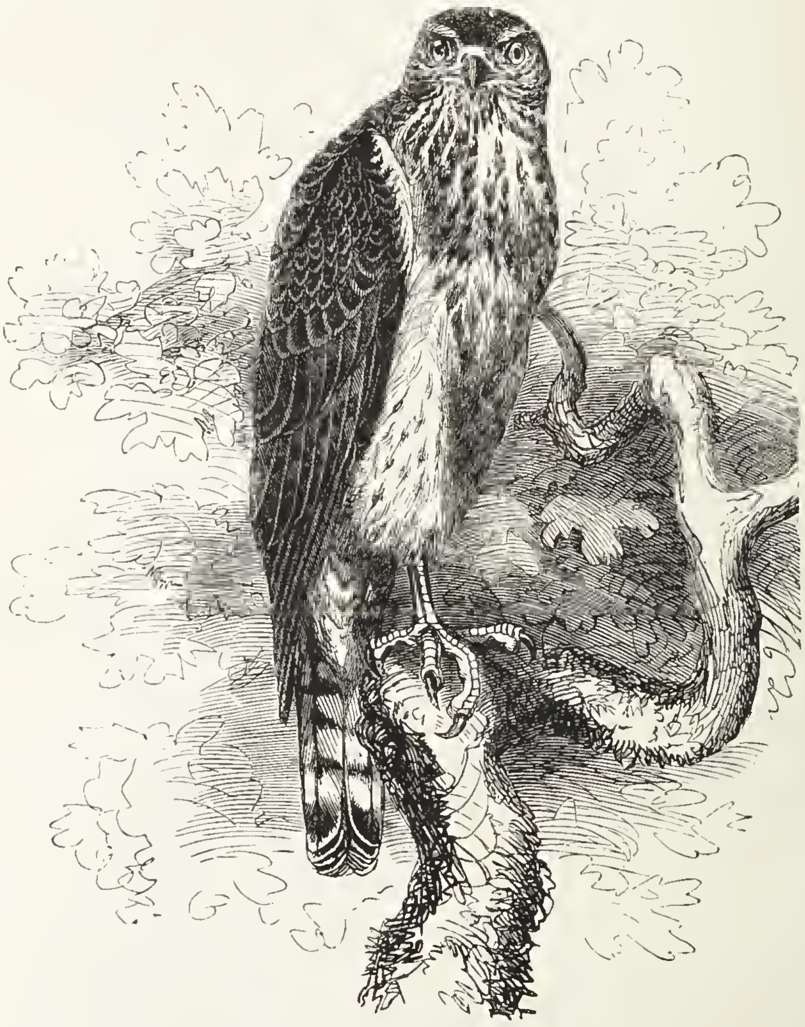
The Double-toothed Hawk (*Harpagus bidentatus*) resembles the Falcons in its general form, but is recognisable by its comparatively small head, long broad tail, and short wings. The beak is very peculiar in its construction, the upper portion being excised immediately behind the hook at its tip, and the lower mandible, which terminates abruptly, has near its extremity two sharp teeth at each side; the third quill of the wings is longer than the rest, the tarsi are short, and of the same length as the toes. This bird, of which there are two species, is only found in South America.

The *Guaviao*, as the Double-toothed Hawk is called by the Brazilians, is thirteen and a half inches long and twenty-six inches broad; the wing measures eight inches, and the tail six inches. The plumage upon the upper part of the body is blackish grey, embellished with a metallic lustre; the under portions are reddish brown, with narrow white stripes upon the throat; the rump is also white, the quills of the wings are brown, ornamented with an irregular border, which is pure white upon the inner web; the tail is black above, brown beneath, and marked with three broad and crooked lines; the eye is light carmine, the cere greenish yellow, the beak blackish grey, and the feet of a beautiful reddish yellow. The plumage of the young is brown above and white beneath, delicately marked with undulating brown lines of various shades.

THE SPARROW HAWK.

The Sparrow Hawk (*Nisus communis*) is the European representative of a very numerous group distributed throughout the world. These birds (see Coloured Plate IX.) are distinguished by their elongated body, small head, and delicate beak, furnished with a very sharp hook at the extremity of the upper mandible; the wings are short, tail long, and short at its tip; the tarsi are high and weak, the toes long and slender, and armed with extremely sharp claws. The plumage varies but little in its colour. This species is about one foot long, and two broad; the wing measures seven inches and two-thirds, and the tail six inches; the female is about three inches longer and five inches broader than her mate. In the full-grown bird the entire upper portion of the body is blackish grey, the under parts are white, marked with undulating reddish brown lines; the shafts of the feathers are also of the latter hue, and brighter in colour in the male than in the female; the tail is tipped with white, and has five or six black stripes. In the young birds the upper portion of the body is a greyish brown, beneath the throat white, striped with brown; the belly and legs are ornamented with irregular spots, the beak is blue, the cere yellow, the iris golden yellow, and the feet pale yellow.

The Sparrow Hawk inhabits the whole of Europe and Central Asia; it is stationary in some parts of the latter continent, but migrates from Europe as winter approaches, and seeks a warmer climate in Northern Africa or India, appearing, according to Jerdon, in the latter country about the beginning of October, and leaving about February or March. This species makes its home principally in woodland districts, preferring such regions as are mountainous or hilly, and is more numerous in the central portions of Europe than in the extreme south. Despite the shortness of its wings, the Sparrow Hawk flies with ease and rapidity, but when upon the ground it hops in the most ungainly manner. Towards such of its feathered brethren as are larger than itself it exhibits no trace of fear, and pounces upon its prey with a dexterity and courage that will bear comparison with the demeanour of the noblest of its congeners. In these encounters, the female bird has decidedly the advantage over her mate, and can bear the brunt of a battle to which his strength would be quite inadequate. Instances have been recorded in which this Hawk has been so eager in the pursuit of its prey as to follow the victim even into a house or wagon, and we lately heard of one darting into a railway carriage when in rapid motion in order to secure its prize. Birds of all sizes, including domestic fowls, are boldly attacked; Naumann mentions having even seen a Sparrow Hawk swoop down and fasten itself upon the back of a Heron. Small quadrupeds are devoured by these birds in great numbers, and they will sometimes stoop upon hares, but whether this is done with any hope of overcoming them, or merely for pleasure, we have not been able to ascertain. In so much dread is this formidable enemy held by the objects of its attack, that on its approach some birds will throw themselves as though dead upon the ground; others will make for their hiding-place with such devious turnings from the direct path as baffle even the skilful steering of their pursuer, and then dart into the inmost recesses of some protecting bush, and thus place themselves for the time in safety. Such of the swift-flying smaller birds as do not hold the Sparrow Hawk in dread, avenge themselves by following it boldly with loud cries whenever it appears; and so annoying does this reception prove to the tyrant of the woodland, that on the approach of some species of Swallows, whose flight is too rapid to admit of revenge, it will soar at once high into the air and beat a hasty retreat to its forest glades. The prey of the Sparrow Hawk is usually conveyed to some quiet spot to be devoured at leisure; the large quills are then pulled out and the carcase devoured piecemeal, the indigestible portions, such as bones, feathers, and hair, being subsequently ejected from the mouth, collected into large balls called castings; it also frequently destroys the eggs and young of such birds as make their nests upon the ground. The voice of this species is but seldom heard except during the breeding season. The nest, which is placed in some thicket at no great elevation, is built of small branches of fir, birch, or pine trees, and the slight hollow that forms the bed for the young is lined with down from the body of the female parent. The eggs, from three to five in number, are large, and very various both in shape, colour, and size; the shell is thick, smooth, white, or greyish or greenish white, and more or less distinctly marked with spots of reddish brown or greyish blue, sometimes lying thickly together and sometimes very sparsely scattered over the surface. The female alone sits upon the eggs, and testifies the utmost solicitude and affection for her young brood, retaining her seat upon the nest in spite of repeated alarms, and doing battle with all intruders. Both parents seek the food necessary for the young family, though the female only is capable of preparing morsels delicate enough for the tender beaks of the nestlings, who, we are told, occasionally perish from hunger should they lose their mother and be left to the more clumsy ministrations of the male bird. The young are fed and instructed long after they have left the nest. Most numerous are the dangers to which the European Sparrow Hawk is exposed, for not only men, but all such birds as are more powerful than itself pursue it with unextinguishable hatred and animosity; in some parts of Asia, on the contrary, it is regarded with favour, owing to the facility with which it can be trained to hunt the smaller kinds of game, particularly Quails; in the southern districts of the Ural, according to Eversmann, large numbers caught in the summer are trained for this purpose, and after having been employed during the autumn are again let loose in order to avoid the difficulty of keeping them through the winter months. The female alone is reared for the chase, the male, when captured, being allowed to fly again, as useless. In India this bird and another species are regarded with equal favour, and are employed by the native falconers in the pursuit of Partridges, Quails, Snipes, Pigeons, and Minas.



THE GOS HAWK (*Astur palumbarius*).

THE TRUE HAWK, OR GOS HAWK.

The True Hawk, or Gos Hawk (*Astur palumbarius*) resembles the Sparrow Hawk in many of its features, but differs from that bird in the compactness of its body, and in the strength of its beak; the tail is rounded, the feet powerful, and the plumage peculiarly marked. This Hawk is about one foot and three-quarters in length, and three feet and a half across; the wing measures twelve inches, and the tail eight and a half; the female is five inches longer and six inches broader than her mate. The plumage upon the upper part of the body is blackish brown, more or less shaded with greyish blue; the lower portions are white, the shafts of the feathers being brownish black, as are the undulating lines with which they are ornamented; the beak is greyish brown, the cere, eyes, and feet pale yellow. In young birds the upper portion of the body is brown, each feather being bordered and spotted with reddish yellow; the lower parts are of a reddish shade, and at a later period of a reddish white, marked with longitudinal brown streaks; the beak, eyes, cere, and feet are paler than in the adult.

The habitat of the Gos Hawk is as extensive as that of the Sparrow Hawk; it is found in great numbers in northern countries, and in some districts may be regarded as stationary; in Southern Europe it is extremely rare, and, according to our own observation, is seldom met with in Northern Africa or India. Wooded country, interspersed with fields and valleys, afford it the localities it prefers, and it is much more numerous in extensive forests than in comparatively small woods. In its habits this species is eminently unsocial, living almost invariably alone, except during the breeding season; its disposition is cunning, wild, and violent, and its movements active and powerful. When upon the wing, it may be seen hovering from time to time, and then rushing down upon its prey with noisy impetuosity; in making a swoop it cleaves the air with great force, the tail at these times being partly outspread. In the air the Gos Hawk is completely master of its movements, and steers its course with imposing majesty; whilst upon the ground, on the contrary, its gait is awkward and ungainly, its step being a sort of lame hop. Its voice consists of a variety of sounds, but is rarely heard; it is loud, resonant, and extremely unpleasing. So rapacious is this formidable bird, that its destructive attacks are repeated almost without intermission during the entire day on birds of all sizes, and even rabbits, squirrels, and water-fowl may be numbered among its victims, the prey being seized with equal facility either when running, flying, or swimming; some of the smaller quadrupeds are so completely paralysed with fear at the approach of their destroyer that they crouch down incapable of moving a limb, while the Hawk swoops down upon them with wings almost closed and talons outspread, producing as it descends a rushing sound, that may be heard above a hundred paces from the spot. Remarkable anecdotes are cited by reliable writers of the extreme cunning and intelligence of these birds when strength proves unavailing. Count Wodzicki tells of a sagacious Hawk that, when all other means had failed by which it hoped to seize upon some tempting but wary pigeons, at length decided upon perching motionless upon a branch, with neck drawn in, so as to simulate an owl; the *ruse* completely succeeded, for the birds, fearing nothing from the huge but helpless looking creature, ventured out and were seized with a rapidity from which escape was hopeless. The same author mentions an instance of a trick played upon another flock of pigeons, in which very different means were adopted; the Hawk in this case, finding that its hoped-for prey utterly refused to come out and allow themselves to be caught, at last alighted upon the dove-cot, and beat and stamped upon it with such violence that the terrified inhabitants were fairly driven from their retreat. Audubon mentions having seen a Hawk kill five Blackbirds in succession as a flock was passing the Ohio, the victims being successively thrown down upon the water until the destroyer had time to collect them at his leisure; this latter feat was accomplished by a series of very dexterous movements, and the booty safely deposited upon dry land. The extraordinary rapacity of the Hawk fully accounts for its unsocial habits; it would, in fact, be impossible for these birds to live together; no relation of life appears to excite any natural feeling, even parents devour their offspring with the most revolting cruelty—indeed, so great is their ferocity, that although provided with abundance of other food, they cannot restrain their murderous propensities, if brought in contact with birds even of their own species. Such of the feathered denizens of the forest as are sufficiently swift of wing to be able to elude the Gos Hawk, pursue it fearlessly, and chase it with rude cries whenever it appears; Crows and Swallows are particularly addicted to this most harassing mode of avenging the wrongs of their more helpless companions.

The eyrie of this species is large and shallow, built of green fir or pine branches, which are added to or renewed from time to time; the bed for the young is lined with down stripped from the parent birds. Old and high trees are usually preferred for building purposes, the nest being placed on a large branch near the main stem; year after year a pair of Hawks will return to the same spot, at each visit making such repairs as the eyrie requires, and renewing the green branches. The eggs, two to four in number, are large, long, and very wide towards the middle; the shell is thick, rough, of a greenish-white colour, and either entirely unmarked, or spotted with yellow; the female alone sits, but both parents guard the nest with jealous care, often attacking men, or even horses should they approach too near. The young grow very quickly, and are so voracious that the eyrie often looks like a slaughter-house, the parents having as much to do as they can manage in catering for their clamorous family, whose greed is so excessive that they will often fall upon and destroy each other when too impatient to await a fresh supply of food. Many and various are the means employed to clear the country of these destructive birds, but all attempts prove inadequate to cope with the extreme cunning and sagacity which they display on the approach of danger. In some parts of Asia their worst qualities are the points on which the favour of the native falconers is grounded, and by them these birds are prized as unrivalled for the purposes of the chase; they even employ them in the pursuit of such large game as hares. When about to hunt large animals, the legs of the Hawk are carefully covered with a kind of leather gaiters, to defend them when dragged through bushes and brambles, as their intended victim endeavours to escape from its clutch; seldom, however, does it succeed, for the bird holds firmly on with one foot, keeping the other raised to clear aside the branches, or get a firm grasp upon a bush, and thus arrest the progress of its quarry when the proper moment arrives.

The SINGING HAWKS (*Melierax*) are an African group, differing somewhat in shape from their European relatives. Their body is more slender, the beak less powerful, and the wings longer than in the races hitherto described; the tail is rounded at its extremity; the tarsi are strong and high, and the feet provided with comparatively short claws.

THE TRUE SINGING HAWK.

The TRUE SINGING HAWK (*Melierax musicus*), as the largest member of this group is called, inhabits Southern Africa, and is replaced in the central portions of that continent by another species (*Melierax polygonus*), closely resembling it in appearance, though somewhat smaller. In the latter the plumage on the upper part of the body, throat, and upper breast, is slate-coloured; the belly, wings, hose, and large wing-covers are white, striped with delicate grey zig-zag markings. The quills are brownish black, the tail-feathers of a paler shade, the latter are tipped with white, and striped three times with a crooked white line; the iris is of a beautiful brown, the beak dark blue, the cere and feet bright orange. The length of this bird is about one foot seven inches, its breadth three feet two inches; the wing measures eleven inches and two-thirds, the tail eight inches and one-third. The female is about one inch and a half longer and two inches broader than her mate. The plumage of the young is brown above, and upon the belly and breast white striped across with light brown; the sides of the head and a line over the breast are of the latter colour. The first-mentioned species is similar in its colour and markings. Le Vaillant, who first described these remarkable Hawks, tells us that they are numerous in Caffraria, where they usually frequent the widely scattered trees, and subsist principally upon hares, partridges, quails, rats, mice, or similar fare. The nest is large, and contains four pure white eggs. Le Vaillant has given the name of Singing Hawk to the species, from an extraordinary fact of which he assures us he had personal experience, namely, that they are capable of pouring out a flow of song, and sometimes continue their vocal exercise for hours together. For our own part we have never heard one of these birds sing, and therefore must abstain from either depreciating or maintaining this statement; but similar species, carefully observed by ourselves, in the more northern parts of Africa, were capable of nothing but a prolonged whistle or piping scream. In appearance alone do these Hawks bear any resemblance to their European congeners; in their habits they are dull, extremely indolent, and entirely incapable of the daring exploits that render other members of their race so formidable; it is by no means uncommon for them to sit for hours together dozing upon a tree, or lazily scanning the surrounding country almost too idly even to note the prey they might easily secure. When in the air their movements resemble in some respects those of our Hawk, but are entirely without the precision and rapidity which render that bird so terrible an opponent. Whilst perched among the branches their appearance is ungainly, as they squat motionless with head drawn in, staring fixedly at one particular spot. According to our own experience, they devour toads, grasshoppers, and various kinds of insects in great numbers; Hartmann tells us that they will also eat lizards. The prey is usually pounced upon as it goes down to the water to drink, yet even then, so slow and apathetic is this bird in its behaviour, that an attempt to seize the victim often proves abortive. We are entirely destitute of particulars as to the incubation of this species.

THE SERPENT HAWK.

The SERPENT HAWK (*Polyboroides typicus*) is a very remarkable member of the Hawk family, inhabiting the same parts of Africa as the bird last mentioned; a very similar species is also met with in Madagascar. The Serpent Hawk is recognisable by the smallness of its head and body, bare cheeks, slender beak, and enormous wings; the tail is long, broad, and slightly rounded; the tarsi high and thin, and the toes small. The plumage is dark greyish blue upon the upper portion of the body, front of neck, and breast; the primary quills are black, the upper secondaries grey, with a black spot near the tip; the tail-feathers are black tipped with white, and have a broad white streak across the middle. The belly, hose, and tail-covers are white, delicately marked with black. The eye is brown, the beak black, the feet lemon colour, the cere and bare patches round the eyes pale yellow. The male bird is one foot eleven inches and a half long, and four feet four inches across the span of the wings; these latter are sixteen and the tail eleven inches in length; the tarsus measures three inches and a quarter, and the middle toe not more than one and a half.

This species is met with throughout the woodland districts of Eastern Soudan, where it frequents such localities as are in the immediate vicinity of water, as it there finds in abundance the reptiles on which it principally subsists. The manner in which this Hawk obtains its prey is very remarkable, as it is enabled to draw its victims from their holes by the aid of a most curious contrivance; the tarsus is so constructed as to allow the foot to be turned in all directions, backwards as well as to the sides, and the claws being comparatively small, the leg can be introduced through a very narrow aperture; it is then moved rapidly into every recess and cranny of the hole, to the inevitable discovery of its helpless occupant. The Serpent Hawks rarely pass much time upon the wing, and, indeed, do little more than fly from one tree to another, exhibiting in all their habits that sluggish and unsocial temperament common to most reptile-eating birds; they live for the most part alone, and spend their time in perching lazily on a bough, or flitting from tree to tree. Verreaux tells us that they will sometimes pursue small birds or quadrupeds.

The succeeding families of RAPTORIAL BIRDS are distinguished by the circumstance that, although they pursue and kill living prey, they will likewise occasionally eat carrion; in order, however, to make the arrangement of this heterogeneous multitude at all clear to the general reader, we must subdivide them into several different groups.

EAGLES.

THE EAGLES.

The Eagles (*Aquilæ*) are distinguishable by the following characteristics: their body is stoutly and compactly built, their head is of moderate size and entirely covered with feathers, and the beak, which is straight to a considerable distance from its base, terminates in a curve or hook; the upper mandible is without teeth, but is slightly waved at its sides; the cere is bare, the tarsi are of moderate size, strong, and more or less covered with feathers, extending in some cases down to the toes; these latter are very powerful, often of great length, and armed with large, much curved, and sharply pointed talons. The wings of some species reach as far as the end of the tail, in others no farther than its root; in all they are rounded at the tip, the fourth and fifth quills being longer than the rest; the tail is long, broad, and either rounded or straight at its extremity. The plumage consists of large and usually pointed feathers, rich in texture, often very soft, but occasionally coarse and harsh. One of the distinguishing features in the plumage of the Eagle is that the feathers on the back of the head and nape are either pointed or considerably prolonged. The eye is large and fiery, and the eyebrows very distinctly marked, thus giving an expression of fierceness to the face.

A glance at different members of the Eagle tribe will at once convince us that they do not all belong to the same country or climate. It is true that they are dispersed over the surface of the whole earth, but each species has its appointed district; all, however, avoid the abodes of man, and make their nests in some unfrequented spot. Mountains, forests, sea-coasts, or the banks of lakes or rivers have each their appointed forms, while some species roam at large over the open plains of the countries in which they live. Such members of the family as inhabit the more northern portions of the globe migrate as winter approaches, and pass their lives in sweeping from land to land, except at such times as they are busied with the cares of incubation. In their habits all are unsocial, keeping company rarely even with individuals of their own race, except during their winter journeyings, and suffering no intruder to approach the spot selected as a breeding-place; so strong is this dislike to society that even when several Eagles are attracted by the same prey the companionship is merely in appearance, each bird coming and going without any reference to the movements of the rest. Notwithstanding this unwillingness to join company with others, even of their own species, they are much attached to their mates, each pair living in close companionship throughout their whole lives, and frequently permitting smaller birds to make their nests in close proximity, either regarding them as entirely beneath their notice, or, perhaps, feeling that such despicable morsels are not worth the long and troublesome chase which their pursuit would necessitate. To some members of the Eagle family the name of Hawk Eagles has been assigned, on account of their very decided resemblance to the Hawk, not merely in appearance, but in disposition.

Though unable to cleave the air with the rapidity of the Falcon, the flight of an Eagle is extremely imposing, as it rises with slow and majestic strokes of its large wings, steering its course by the aid of its tail, or hovers for minutes at a time without any apparent effort; when descending to seize its prey its movements are somewhat more rapid, but are not to be compared with the stoop of the Hawk. While upon the ground nothing can be more clumsy than the mode of progression employed by these large birds; they hop, or rather jump, with a most peculiar step, at the same time helping themselves along with their wings; far different is their appearance when they are seen perched with body erect upon some tree, from whence they gaze upon the world beneath with a calm dignity worthy of the royalty not unfrequently assigned to them. The sight of the Eagle is more highly developed than any other sense; it also hears well, and exhibits a marked dislike to any sharp sound. Many wonderful tales have been circulated as to the power of appreciating odours possessed by these birds, but for our own part we consider these accounts as much exaggerated. All the members of the family are intelligent, prudent, in some cases cunning, and they have such an appreciation of their own strength as to impart an air of nobility to their demeanour even towards man himself. When in pursuit, Eagles exhibit great fierceness, and seem to enjoy the full excitement of the chase; even such large quadrupeds as foxes fall victims to their ferocity, and the swiftest inhabitants of the air are not safe from their pursuit; instances are on record in which man himself has had to combat the attacks of these bold and audacious birds.

The eyries built by the various species of Eagles differ but little in appearance; all are exceedingly large, broad, and very shallow. They are formed of boughs, sometimes of considerable thickness, on these are placed smaller branches, and the interior is then padded with twigs upon which the leaves have been left, in order to form a warm bed. These nests are usually constructed upon a tree, or upon some rocky precipice. The breeding season varies according to the climate; the eggs often but one, rarely three in number, are incubated by the female alone. Both parents, however, assist in rearing their progeny, and have been known to fly to a distance of many miles in search of food for their hungry family. The nestlings are tended for some time after they are fully fledged.

Foremost among the Eagles three species stand pre-eminent, and have been celebrated and dreaded from the most ancient times. These form the group of TRUE EAGLES, and are recognisable by their powerful bodies, large and well-shaped heads, and broad long wings, which reach to the end of the tail; in the wings the fourth quill is longer than the rest; the tail is long, and the legs strong and of moderate height; the beak is large, the upper mandible curves very decidedly from the cere downwards, and bulges outwards at its sides; the eyes, which are of great size, lie partly concealed under the projecting brows; the feet are powerful and of moderate length, the claws large, curved, and sharp. The plumage is rich and soft, and its feathers pointed, those at the back of the head and on the nape being slender and elongated; the tarsi are feathered down to the toes.

Thus far we have described collectively the three species forming the family of True Eagles; but, to avoid confusion, we will now speak of the Tawny, the Golden, and the Imperial Eagles, each under its proper heading.

THE TAWNY EAGLE.

The TAWNY EAGLE (*Aquila fulva*), the largest, strongest, and most compactly built member of the family, is from two and three-quarters to three feet in length, and from six and two-thirds to seven feet in breadth; the wing measures from one foot two inches to two feet, and the tail thirteen or fourteen inches. The largest of these measurements applies to the female bird. When the plumage is in its full beauty, the head and back of the neck are brownish yellow, and the rest of the feathers of a uniform dark brown; the tail is white, striped, or spotted with black at its upper portion, the lower half entirely black; the hose are almost white. Naumann tells that only the two centre tail-feathers are of equal length, those towards the sides being slightly graduated.

THE GOLDEN EAGLE.

The GOLDEN EAGLE (*Aquila chrysaëtos*) is much more slenderly built and has a smaller head than the bird above described, but the wings and tail are longer, and the former do not extend as far as the extremity of the tail. The male is three feet long and seven feet and a quarter across the span of the wings; the wing measures two feet four inches and the tail thirteen inches; the female is three feet two inches in length, and seven feet and a half across. The plumage is lighter than that of the Tawny Eagle, and more of a reddish brown upon the breast, hose, and lower tail-covers; the region of the shoulder is indicated by a white spot; the tail is always brownish grey, marked with irregular crooked black lines, and the black stripes are narrower than in the preceding species. All the feathers that compose the tail are of equal length, except the two outer ones, which are somewhat shortened; the lower part of the wing is always very dark, and often entirely without markings. The plumage of the young is darker, and without the white patch in the shoulder, and the reddish-brown feathers on the back of the head and neck, that characterise the adult bird.

THE IMPERIAL EAGLE.

The IMPERIAL EAGLE (*Aquila imperialis*) is considerably smaller than the preceding, not exceeding two feet and a half to two feet and three-quarters in length; its breadth across the wings is from six to six feet and two-thirds, the wing measures from two, to two feet and a quarter, and the tail from ten, to twelve inches and a half. The female is of the same size as the male Tawny Eagle. The body of this species is compact, and the wings so long that they extend beyond the comparatively short tail. In the adult the plumage is of a dark, somewhat variegated, brown ; the head and nape are reddish yellow, and the shoulders are ornamented with a white patch ; the tail-feathers are grey, striped with black. The plumage of the young is tawny, marked longitudinally with dark brown. Both the Golden and Tawny Eagles are found throughout all such countries of Europe as possess high mountains or extensive forests, and both are met with in many parts of Asia and North America. The Imperial Eagle, on the contrary, inhabits the south-eastern portion of our continent from Hungary to Mongolia ; Jerdon tells us that it not only visits India during its migrations, but breeds there. This last species frequents open tracts of country, whilst the Tawny and Golden Eagles prefer rocky districts, the former always building amongst the mountain fastnesses, and the latter occasionally making her eyrie among the branches of one of the gigantic trees of the forest. The Imperial Eagle also makes its nest upon trees, and often at no great distance from the abodes of man. All these birds have many habits in common ; they commence their pursuit of prey long after the sun rises, and confine their excursions within the limits of a certain district. Both mates hunt together, but the possession of some delicate morsel which one or other refuses to share with its companion is often a cause of strife between them. The chase lasts till noon, when they retire to rest in some quiet spot, and remain perched with drooping plumage, but with ever watchful eye, whilst the work of digestion is going on. When this period of repose is over they fly in search of water, not only drinking largely, but bathing in the cooling stream. The afternoon is passed in the same manner as the morning ; and the early part of the evening is spent in soaring and floating through the air, till darkness has closed around, when the wary couples quietly retire to their safe and often unapproachable sleeping-places. The force with which these enormous birds clutch their prey is so violent that the entrance of a Golden Eagle's claws into the sides of its victim can be distinctly heard, and its flesh is often partially devoured before life is extinct.

Many tales are told of Eagles having carried off young children, and we know instances in which they have attacked man himself. Naumann mentions an amusing example that came under his own notice, a Tawny Eagle in his possession having been captured under the following circumstances :—This rash and hungry bird, he tells us, was tempted to seize upon a fine fat pig as it ran about its native village ; but the pig was so obstinate as to appear by no means inclined to leave this world quietly, and uttered such piercing cries as brought a passer-by to its assistance. The peasant succeeded in dislodging the Eagle, who, however, determined not to be entirely baffled, pounced upon a cat that was contemplating the struggle, and flew with pussy to a neighbouring hedge. Exasperated at this second attack, the man rushed into a cottage, seized a loaded gun, and returned in the hope of saving the second victim ; but no sooner did the Eagle observe the approach of this disturber of its quiet enjoyment than it darted upon him and attacked him with such fury that he was with difficulty saved by the people who ran in answer to his cries for help, and at last succeeded in taking the bird prisoner.

When about to devour their prey these birds always retire to some spot where they are likely to be unmolested ; even whilst the work of destruction is slowly going on they pause from time to time and listen attentively, in the fear that an intruder is at hand. The entire carcase is in most cases consumed, the head being first devoured, and then the rest of the body ; even the bones are crushed and swallowed, but the entrails are rejected. The hair or feathers would seem to be actually necessary to digestion, seeing that they are swallowed in large quantities, probably for the purpose of clearing out their stomachs, where they become formed into balls, which are rejected every few days in the shape of "castings." When hair or feathers are not obtainable they will swallow hay or straw, apparently for a like purpose. The eyrie is built about the month of March. The eggs, which are comparatively small, are round, rough-shelled, white or greenish grey, and irregularly marked with spots of various shapes and sizes; those of the Tawny Eagle are the largest, and those of the Golden Eagle the smallest eggs of the three; in other respects they so closely resemble each other that the eyries are frequently mistaken. The eggs are sometimes three in number, but it is rare to find more than one, or at any rate two nestlings. The female broods for five weeks, and is assisted by her mate in the heavy duty of providing food for the family. If taken from the nest young, Eagles may be easily tamed, and become much attached to those who feed them; if carefully tended they often attain a great age, and instances are on record of their having lived for upwards of a century in confinement.

THE GOLDEN EAGLE (*Aquila chrysaëtos*).

We learn from Pallas and Eversmann that the Tawny and Golden Eagles are extensively employed by the Bashkirs for hunting purposes. The inhabitants of Mongolia set a high value upon the wing and tail feathers of these birds, offering them to their gods, and also employing them to feather their arrows; they never willingly hurt an Eagle, and should such an accident occur, it is despatched with the utmost promptitude, in order to avoid the anger of the bad spirits. It is a remarkable fact that these strange superstitions are shared by the American Indians, by whom the body of an Eagle, coloured with red paint, and surmounted with the tail of a rattlesnake, is often employed to symbolise some notable deed of daring. Some tribes regard the plumes as tokens of bravery, placing a feather upon their heads for every enemy they kill, and, when engaged in war, often fasten these feathers to their weapons, or wear them in their hair.

THE IMPERIAL EAGLE (*Aquila imperialis*).

THE SPOTTED EAGLE.

The Spotted Eagle (*Aquila nævia*) is met with in great numbers in Germany, Russia, and some of the southern parts of our continent; it also inhabits Asia, and during the winter is frequently seen in North Africa. This species is not more than from twenty-five to twenty-seven inches in length, and from five feet four inches to five feet eight inches broad; the wing measures from eighteen to nineteen inches and three-quarters, and the tail from nine and a half to ten inches. In the adult the plumage is of a uniform brown, darkest and most glossy upon the back; the back of the head is yellowish red or pale fawn colour; the centre quills are distinctly striped, the upper and lower wing-covers bordered with a light shade; the tail-feathers are numerously striped and mottled, or are of a uniform colour, with a light tip; the upper tail-covers are brownish yellow. In the young birds the plumage is variegated, the feathers being for the most part brown, and spotted with light yellow on both sides of the shaft and at the tip; in some instances the wings of the young have a beautiful border; the hose and lower wing-covers are a mixture of brown and dirty white.

The Spotted Eagle and its congeners for the most part frequent marshy or boggy country, and are found in large numbers in woodland districts. Each pair seems to live within a certain limited space, in the centre of which the eyrie is built; and so attached are they to the spot they have selected for a home, that it is almost impossible to drive them to other quarters; even should the eggs or young be destroyed, the parents will not quit the eyrie, or only leave it to erect another a few yards from the old nest. In the northern parts of Europe the Spotted Eagle is met with during the summer, appearing early in March, and leaving about October, some few remain throughout the winter. In fierceness and daring this species is far inferior to any other member of the group to which it belongs; its manners are gentle and its disposition timid, as may at once be seen by the expression of its eye. When perched, its appearance is extremely ignoble; but when on the wing it exhibits some of the dignity characteristic of its race, and often passes whole hours in performing beautiful gyrations through the air. This Eagle destroys small birds, mice, and frogs in great numbers; it perches like a Buzzard upon a tree, stone, or post, and from thence peers around in the hope of descrying a victim; should its observations prove successful, it at once rapidly descends to seize its prey, which is sometimes pursued with a kind of hopping gait; it also devours carrion with the avidity of a vulture. The voice of this species is very loud and resonant, and when the bird is pleased its sound is not disagreeable. Birch-trees are usually preferred for building purposes, and where these are not to be found, fir or pine trees are selected; the eyrie, which is small and very carelessly constructed, is flat, and ornamented with green branches. The egg—for there is usually but one—is either oval or round; the shell is white, with pale blueish grey, reddish brown, or yellow spots, more or less distinctly laid on; some are prettily adorned with a wreath of spots round the centre. The female sits for three weeks, and, should she be driven from her charge, perches upon the nearest tree and utters pitiful cries; the young are tended by both parents, and fed principally upon small reptiles; if taken from the nest they are easily tamed.

The DWARF EAGLES (*Hieraëtos*) are the smallest members of this family, and have received the name they bear on account of the shortness of their legs; the two species we are about to describe closely resemble each other, and are about one foot and a half long, and three feet seven inches broad; the wing measures thirteen inches and three-quarters and the tail seven inches and a quarter. The female is one inch and a half longer and about three inches broader than her mate.

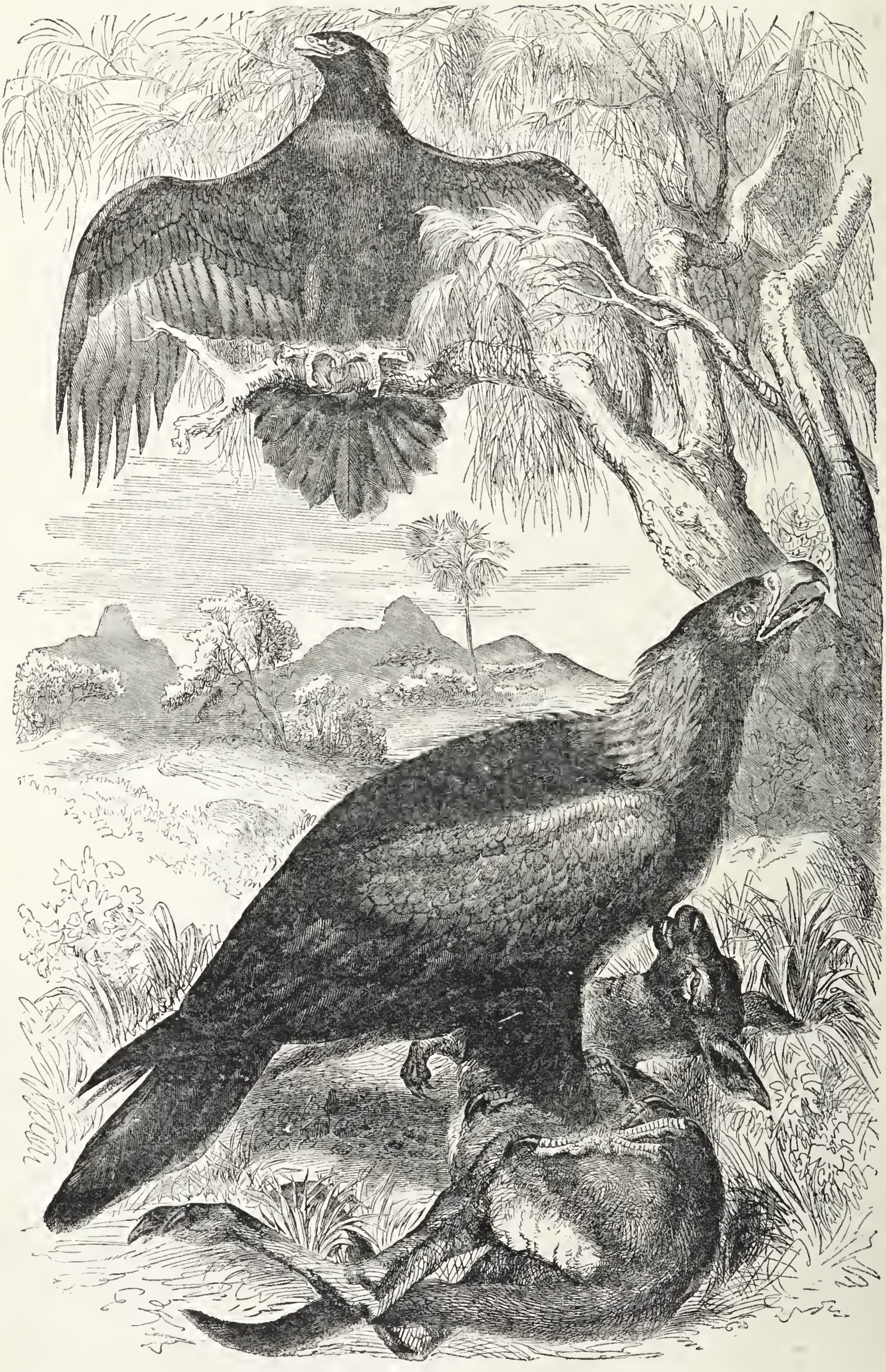
THE BOOTED EAGLE.

The BOOTED EAGLE (*Hieraëtos pennata*) is yellowish white upon the brow, and striped upon the top of the head with a darker shade; the nape is reddish brown, the mantle and wings blackish brown, each feather having a light edge, and thus imparting a mottled appearance to the back and surrounding the wings with two indistinct borders; the shoulder is marked with a white spot; the upper sides of the tail-feathers are dark brown, with a light tip, the lower part is pale grey; the feathers on the lower portions of the bird are light yellow, with brown lines upon the shafts; these lines are broadest upon the breast, gradually decreasing until they are scarcely visible upon the hose; in some old birds these dark markings are only visible upon a small part of the breast; the eyes are of a pale bronze tint, the beak light blue at its base and tipped with black, the feet lemon yellow, and the cere straw colour. The young are of a pale rust red upon the lower part of the body, but in other respects resemble their parents. The nestlings are brown above, and reddish yellow beneath; the shafts of the feathers are not striped, and there is no white upon the shoulder.

THE DWARF EAGLE.

The Dwarf Eagle (*Hieraëtos minuta*) is pale reddish brown upon the head and nape, longitudinally marked with black streaks, which are most prominent upon the fore part of the head; the mantle is brown, the long shoulder-feathers blackish brown; the tail is pale brown, tipped with a light shade and surrounded by three or four distinct black borders; the eyes are encircled by a dark ring; the hose, tarsi, and lower wing-covers are paler than the rest of the body; this species has also the white spot upon the shoulders; the eye is brown, the beak blue at the base, black at the tip; the cere and toes are lemon yellow. The young are light rust red upon the head, which is distinctly marked with black upon the fore part; the entire body is paler than that of the older birds, and the borders upon the tail-covers scarcely perceptible. The habitat of the Dwarf Eagles lies within the south and south-eastern portions of our continent; what parts of Asia they inhabit is still unknown, but the Booted species is found throughout the whole of India and Ceylon, and breeds in both countries; during the summer they are very common in Europe, but they migrate either in pairs or flocks as winter approaches, at which season they visit Egypt and the upper parts of the Nile in large numbers. In their habits and disposition the Dwarf Eagles are by no means inferior to the True Eagles, even exceeding the latter birds in energy and activity, but they do not equal them in prudence and foresight. Their flight is rapid, powerful, and light; they hover with ease, and soar high into the air, darting with the rapidity of an arrow upon their prey, and sometimes flying near the ground while engaged in its pursuit. When about to perch they select low branches, upon which they sit erect and motionless, but most carefully observant of all that passes around them. We have never seen one of these birds alone; they are always met with either in pairs or small parties, that remain together even during their migrations. The cry of both species is clear, and has a piping sound. Birds of very various kinds and many small quadrupeds are eagerly pursued by the Dwarf Eagle, who prefers woodland districts for its hunting-grounds, and captures its prey after the manner of the Hawk. The breeding season commences about the month of April, and the eyrie is built with slender branches upon the top of a lofty tree. Several pairs are usually found brooding in close proximity to each other. The eggs, two in number, resemble those of the Hawk in size, form, and colour. When first hatched the young are covered with long, light, silky down, which is yellow upon the top of the head. During such time as the female is engaged in sitting upon the nest, she is constantly relieved for hours at a time by her mate, who frequently takes her place, and exhibits the utmost constancy in his demonstrations of attachment. Wodzicki tells us that when about to approach its eyrie, the Dwarf Eagle perches upon a branch at some distance from it, lowers its head, inflates its crop, and walks slowly into the nest. During the period of incubation, these birds, if molested, exhibit great courage and fierceness; towards the Screech Owl in particular they manifest an inveterate hatred, that leads to many deadly encounters.

The WEDGE-TAILED EAGLES (*Uroaëtos*) constitute a group of large birds that inhabit Australia. In shape and plumage they resemble the True Eagles, but are distinguishable from them by their elongated powerful beaks, long and abruptly-graduated tails, and by the lengthy feathers that adorn the back of the neck.



BOLD WEDGE-TAILED EAGLES (*Uroaëtos audax*).

THE BOLD WEDGE-TAILED EAGLE.

The **Bold Wedge-tailed Eagle** (*Uroaëtos audax*) is three feet one inch long, and about six feet eight inches broad. The back and sides of the throat are rust colour, the rest of the body blackish brown. The feathers of the wings and uppeı tail-covers are edged and tipped with pale brown. The eye is yellowish white, the beak is yellowish grey at its root, and yellow at the extremity; the feet are pale yellow. Anotheı species or variety is also met with, more slender in form and paler in plumage than that above described.

The Bold Wedge-tailed Eagles are common throughout Australia, where they frequent open plains and forests, preferring such localities as are inhabited by kangaroos. Gould tells us that all that has been said about the strength, courage, and rapacity of the Tawny Eagle may also be applied to these birds, whose unremitting attacks upon flocks of sheep are a cause of constant loss to the colonists; small kangaroos they destroy in great numbers, but rarely contend with such as are full grown. Gould also mentions having seen one of these Eagles pursuing a mother kangaroo with great patience, and watching for the moment when fatigue would compel her to empty the young from her pouch, and thus yield them an easy prey. From the same source we learn that they will eat carrion, and may often be seen perched thirty or forty at a time upon the carcase of an ox. The eyrie is built upon such high trees as to be almost inaccessible; in size it varies considerably, as it is enlarged and repaired from time to time by its owners, who return to the same nest for many successive years. The outer walls are formed of large boughs, these again are interwoven with smaller branches, and the interior lined with leaves and slender twigs. According to Ramsay, the breeding season is at the end of the summer. The eggs, two in number, are round and rough shelled, three inches long, and at the thickest part two inches and three-eighths in diameter; these are white, spotted with red, yellowish brown, or purple. Many forests contain the remains of large settlements made by these birds before the white man had penetrated into the interior of the country. The Bold Wedge-tailed Eagle is often taken young from the nest by the natives, and when reared exported to Europe.

The HAWK EAGLES (*Pseudaëtos Eudolmaëtos*, or *Asturaëtos*) constitute a group distinguished by their comparatively short wings, that do not reach the end of the very long tail, and by their high tarsi, feathered even to the toes, which are armed with long and broad curved talons; the beak is long, but powerful.

THE HAWK EAGLE.

Bonelli's Hawk Eagle (*Pseudaëtos Bonellii*), as the European representative of this group is called, is about two feet four inches long, and four feet ten inches broad; the wing measures one foot four inches, and the tail ten inches. The female is three inches longer and four inches broader. Upon the brow the plumage is white, as is also a streak passing over the eyes; the top of the head and nape are brown, darkly striped; the upper part of the back is white, its feathers having blackish-brown spots upon their edges; the mantle is of a uniform dark brown, and blackish brown at its extremity; the upper tail-covers are white, mottled with brown; the throat, breast, and centre of belly white, the shafts of the feathers spotted with black; the upper surface of the tail is greyish brown, tipped with white, and marked with seven crooked dark lines; the under side is whitish yellow, spotted with brownish grey. In the young the top of the head is light red, the nape fawn colour, the mantle light brown, each feather being bordered with reddish yellow; the tail is greyish brown above, streaked ten times, and edged with white; the lower portion of the body is principally of a pale yellowish brown, the feathers having delicate dark streaks upon the shafts; the belly and lower wing-covers are dirty reddish white, without any markings. The eye is bronze colour, the beak greyish blue, the cere and feet greyish yellow.

These Eagles are common in Germany, Greece, and South Italy, and more numerous than any others in Spain and Algiers, where they frequent bare mountains; they are also met with in north-western Africa and India, always resorting to the hilly districts of the latter country. These birds do not migrate, but wander at large in considerable flocks, except during the breeding season, when they are extremely unsocial, prudently permitting none of their companions to approach the nest. In disposition the Hawk Eagle has much in common with the group whose name it bears, equalling the Gos-Hawk in courage and hardihood, but far exceeding it in bodily powers. When upon the wing its movements will bear comparison with those of the Falcon, but when perched its attitude is much less imposing. The eye of this species is peculiarly brilliant and fiery in its glance, clearly indicating the disposition of its owner, whose fierce boldness often leads it to contend with the largest and most formidable of its race. Some writers tell us that the Hawk Eagle confines its attacks to water birds, but this is not the case; in Spain it is numbered amongst the most terrible invaders of the poultry-yard, whence it will carry off a good fat hen under the very eyes of its owner. Jerdon mentions having seen it in India seize upon and bring down Peacocks. The eyrie, which is usually placed in holes of rocks, is but rarely met with; one found by Krüper in Greece contained two eggs, the walls were formed of sticks, and the interior was lined with down. The eggs differed from each other, both in colour and markings, one being of a dirty white without spots, and the other pure white, and distinctly speckled. The nest to which we allude must have been an uncommonly warm cradle for the nestlings, for it was so placed as to be exposed to the full force of the sun's rays.

The HOODED EAGLES (*Spizaëtos*) are slender in form, with short wings, long tails, and high, powerful feet, one distinguishing character being the possession of a more or less developed tuft upon the back of the head.

THE MARTIAL HOODED EAGLE.

The Martial Hooded Eagle (*Spizactos bellicosus*) is the largest and strongest member of this group. This powerful bird is three feet long, and of great breadth; the wing measures two feet, the tail fourteen inches. Its plumage is extremely simple; the upper part of the body is a beautiful brown, the head of a darker shade; the individual quills of the mantle have a light edge, and the wings a border formed by the light tips of the feathers that form the large wing-covers; a white stripe passes over the eyes to the back of the head; the entire lower parts of the body are white, shaded with blue; the tail is dark brown above, light brown beneath, and striped crossways with six dark lines; the outer web of the large quills is black, the inner lighter in colour and darkly striped; the lower wing-covers are pure white, the eye is greyish brown, the cere greenish, the beak black, and the feet lead colour. This species, which is an inhabitant of Africa, has been so little noticed by modern travellers that in describing its habits we must quote Le Vaillant, who wrote at the close of the last century; from this source we learn that the Martial Eagle lives in pairs, which keep together with the greatest constancy, each couple remaining jealously apart from others of their own kind. The nest is usually built upon a solitary tree, and from this point the pair fly forth, and spread terror over the surrounding country. No bird, however large, is safe from their pursuit, and even when Vultures and Ravens combine in the hope of collectively routing the common enemy, they are no sooner face to face with the foe than they are ignominiously put to flight. These Eagles destroy antelopes and hares in great numbers; and are, in fact, the tyrants of the districts they inhabit. When on the wing, their motions are light and rapid; their voice is sometimes harsh and deep, and at others sharp and penetrating. These birds usually build upon the summits of trees; sometimes, however, though rarely, their nest is placed in holes of rocks. The cradle for their young is formed of three distinct layers, the first being formed of thick and knotty branches, the second consists of twigs, moss, and large leaves, and the third is a lining composed of still more delicate and elastic materials; the whole structure is about four or five feet in diameter, and so strongly built that it will bear a man's weight; the same nest is repaired and employed year after year during the entire life of the couple by whom it was originally constructed. The eggs, of which there are two, are about three inches long, pure white, and almost round. The female alone broods, but both parents unite in the enormous labour required to feed their voracious young, whose gaping mouths they find it almost impossible to satisfy; indeed, the tales told of the quantity they devour seem almost to border on the fabulous.

THE TUFTED EAGLE.

The Tufted Eagle (*Lophoaëtos occipitalis*), also an inhabitant of Africa, is considerably smaller than its congeners, and easily recognisable by the crest that adorns its head. The body is compact, the wings long, the tail short, and the tarsi high. The plumage is almost entirely dark brown, deepest in shade upon the belly, and lightest on the breast; the edges of the wings, the base of the crest, lower wing-covers, the plumage upon the tarsi, roots of the tail-feathers, and three crooked streaks passing over the tail are of a whitish hue. The eyes are bright yellow, the beak greyish blue, dark at its tip, and light towards its base; the cere is pale yellow, and the feet straw colour. The length of this bird is about nineteen inches and three-quarters, its breadth forty-six inches; the wing measures twelve and three-quarters, the tail seven inches. The female is one inch and a quarter longer and two inches broader than her mate.

The Tufted Eagle is met with in considerable numbers in the countries watered by the Upper Nile, where it usually frequents groups of Mimosa trees, perching amongst the branches for hours together, with eyes half closed, as it lazily spreads or closes the crest upon its head. At such times it has very little the appearance of a bird of prey; but should some poor mouse, rat, pigeon, or squirrel venture near the spot where it indolently reposes, all the instincts of an Eagle are at once exhibited, and the apparently idle dreamer darts down upon its victim with a boldness and rapacity fully equalling that displayed by some European Hawks; in fact, despite the smallness of its size, it may be regarded as one of the most terrible of the numerous freebooters inhabiting the African forests. We learn from Le Vaillant that this species builds upon trees, and lines its nest with wool or feathers, and that the eggs, two in number, are almost round, of a whitish colour, and marked with reddish-brown spots. The Tufted Eagle is but rarely brought to Europe; indeed, the Zoological Gardens of London, Antwerp, and Hamburg are, we believe, the only places of public resort that have boasted a living specimen of this very striking species, whose streaming crest, dark, rich plumage, and fiery eyes, cannot fail to render it an object of interest. It may be kept alive for many years in this country if carefully tended, and is but little sensitive as to climate. A Tufted Eagle that we saw in confinement was very lively, and uttered its cry lustily, both morning and evening; but in its general behaviour showed little of the courage for which it is remarkable in a state of freedom.

The DESTROYING EAGLES (*Pternura*) constitute a race of South American birds, very closely resembling the Tufted Eagle in their general appearance, but recognisable by the comparative length of their wings (in which the fifth quill is longer than the rest), and by the shortness of their toes.

THE URUTAURANA.

The URUTAURANA (*Pternura tyrannus*), the most stately member of this group, is twenty-six inches in length and fifty in breadth; the wing measures sixteen and the tail fourteen inches; the female is two inches longer and three or four inches broader than her mate. In this species, the head, throat, nape, and upper part of the breast are black; the plumage of the back is an uniform blackish brown, that of the lower portions of the body of the same hue, marked with white; the wing-feathers are ornamented with five or six white lines; the tail-feathers have similar markings, and are bordered with white, so that when seen from above they appear of a greyish brown, and on the under side whitish grey; the plumage upon the legs and feet is also mottled with white. The young birds are brown or greyish brown, the feathers upon the back being edged with a lighter shade; the throat is whitish, the breast yellowish brown, marked with dark spots; the eye orange colour, the beak greyish black; the cere greyish yellow, and the feet pale yellow.

THE TUFTED EAGLE (*Lophoaëtos occipitalis*).

The Urutaurana inhabits the forests in the interior of Brazil, but is never met with in large numbers; indeed, the Prince von Wied, who first discovered this species, only captured one specimen, and Burmeister saw but two during his travels. The bird shot by the first-mentioned naturalist was killed whilst in the act of seizing an opossum. Monkeys and small quadrupeds of all kinds constitute its usual food. The nest, which was built upon the branch of a tree, contained but two eggs. These scanty particulars include all the information that has as yet been obtained respecting its habits.

Brehm mentions having seen a still rarer species, the *Pternura Isidori*, in confinement, and tells us that when first caged it proved extremely fierce and shy, becoming, however, much tamer after a few months. It would eat every kind of animal food, even fish; but always carefully examined any new viand before proceeding to devour it. This bird exhibited perfect indifference to change of climate, frequently remaining voluntarily exposed to a pelting rain or fall of snow when it could have readily found shelter beneath the roof of its cage.

The BRAZILIAN EAGLES (*Morphnus*), also inhabitants of the woods of Brazil, form a race of remarkable birds, concerning whose proper position there has been great variety of opinion, seeing that they combine the size, strength, and noble appearance of an Eagle with the shape of the Sparrow Hawk. All the members of this group possess stout bodies and large heads; their wings are short, their tails broad and long; the tarsus is at least twice as long as the middle toe, and but slightly covered with feathers below the heel, the other parts being protected with horny plates; the toes are powerful, though short, and armed with strong, sharp talons; the beak is long, shallow, and comparatively weak; the upper mandible terminates in an abrupt hook, and its edges bulge slightly outwards.

THE CRESTED BRAZILIAN EAGLE.

The CRESTED BRAZILIAN EAGLE (*Morphnus Guianensis*) is the species with which we are most familiar. In length this bird measures twenty-five, in breadth fifty-seven inches; the wing from fifteen to sixteen, and the tail from eleven to twelve inches. The long, streaming, and somewhat owl-like plumage is prolonged at the back of the neck into a crest six inches long, and varies considerably according to the age of the specimen. We learn from the Prince von Wied that the head, throat, breast, belly, rump, and legs are of spotless white, only varied here and there by a slight yellow shade; the back, shoulders, and wing-covers are of a pale greyish red, the feathers being spotted and mottled with red; the quills and tail are blackish brown, edged with a narrow irregular greyish-red line. Pelzehn considers that the plumage above described belongs to the young, and tells us that as they increase in age their feathers become darker. According to this authority, the old birds are dark brown upon the head and throat, and greenish black upon the whole of the upper part of the body and breast; the upper tail-covers being streaked and tipped with white. We must leave it to future naturalists to decide which of these descriptions is correct.

These Eagles inhabit the whole of South America, frequenting both the forests near the coast and such fertile spots as are occasionally found upon the barren steppes; but districts near rivers appear to be their favourite resorts. According to Schomburghk, they are easily recognisable by their loud cry, and by the effect of their snowy plumage, which acquires new beauty by contrast with the deep blue sky under which they wheel their rapid and varied flight. When about to perch they select the summit of a lofty tree, and often linger for hours together upon the same branch, almost motionless, or amusing themselves by playing with and exhibiting their flowing crests in a variety of positions. We learn from the Prince von Wied that they subsist principally upon opossums and monkeys, but will also devour a great variety of small quadrupeds and birds. The capture of the Crested Brazilian Eagles is attended with considerable difficulty, and their eyries are almost inaccessible, owing to the great height of the trees upon which they are built. It would seem that these birds are by no means inferior to their congeners in courage, for the Prince von Wied mentions that the specimen he obtained, though it had been shot through the neck by a large arrow, resisted boldly, both with beak and claws, when he attempted to take possession of it.

THE HARPY EAGLE.

The Harpy Eagle (*Harpyia destructor*) is the most formidable of all the Eagles found in South America. The body of this bird is powerful, its head large, its tail robust and of considerable length; the wings, on the contrary, are short and blunt; the beak is unusually high and strong, very decidedly rounded at its summit, and sharp at the edges, which bulge outwards below the nostrils, and form a tooth-like appendage; the feet are stronger than those of any other Bird of Prey, the toes are long, and armed with very long, thick, hooked talons; the tarsi are partially covered in front with feathers, the bare places being protected by large horny plates. The plumage, which is soft and rich, is prolonged into a large, broad crest at the back of the neck; the head and nape are grey, the crest, and entire back, wings, tail, upper part of the breast and sides of the rump, dark slate colour; the tail is ornamented with three white stripes; the lower portion of the breast and rump are white, the belly and legs are also white, the former spotted and the latter streaked with black. The beak and claws are black, the legs yellow, and the eyes reddish yellow. In the young bird all these markings are indistinct; the feathers on the back are striped with grey, and those upon the breast and belly spotted with black. Tschudi gives the length of this species as being three feet two inches, that of the tail being one foot one inch, whilst according to Burmeister its size exceeds this measurement. The middle toe is three inches, the hinder toe one inch and a half long, and both are furnished with claws an inch and a half in length.

All the large forests of South America, from Mexico to the interior of Brazil, are inhabited by this large and formidable Eagle, which, although it occasionally visits the warm valleys interspersed among the mountain ranges, never leaves them to take shelter on the rocky heights by which they are surrounded. Such old writers as have treated of the Natural History of the American continent never fail to mention so destructive a bird, and about its life and habits many strange fables have been invented. Fernandez describes the Harpy as being as large as a sheep, and constantly attacking men; but tells us that notwithstanding its great fierceness it can be tamed and employed in the chase. Mauduyt repeats the above statements, and adds thereto that a Harpy with one blow of its beak, is able to split open a man's skull; stating, moreover, that these birds are much addicted to this exercise of their powers. Modern naturalists have refuted these notions, and we will give, in a small compass, the facts which such men as D'Orbigny and Tschudi have been able to ascertain by their own observations. According to these authorities, the Harpy dwells in the moist, well-watered forests of South America, within the boundaries already indicated, rarely, however, appearing in the depths of these leafy wildernesses, but frequenting the banks of rivers, where an abundance of animal life is always to be met with. In no part of the continent are these birds to be found in great numbers, doubtless owing to the fact that from time immemorial they have been hunted by the natives for the sake of their feathers. Like the Hawk, they are seldom seen on the summits of trees, but sit upon the branches, whence they rise with short, irregular strokes, and fly with arrow-like rapidity when in pursuit of prey, swooping upon it with great force, after describing a few preparatory evolutions.

According to D'Orbigny, these Eagles are of solitary habits, except during the breeding season. From Tschudi we learn that the Harpy is much dreaded by the Indians, owing to its devastating attacks upon their property; indeed, in some woodland districts the inhabitants find it impossible to keep poultry or small dogs, for so bold and audacious are these feathered poachers that they have been known to seize a fine fat hen whilst its owner was standing not a yard from the spot. All such quadrupeds as are not large, or powerfully armed, fall victims to their voracity; and Schomburghk was told by the natives that instances are on record of children having been carried off and devoured. From the same source we learn that the Sloth is sometimes literally torn piece by piece from the branches when it cannot be induced to relax its hold by other means. We need scarcely say that we do not vouch for this latter statement. By the monkey tribes that swarm and gambol in the South American forests, the Harpy is regarded with such dread that, should a frolicsome party be made aware of the approach of their powerful enemy, the terrified creatures at once beat a hasty retreat to the thickest parts of the surrounding foliage, uttering the most pitiful cries as they endeavour to escape from the impending danger, against which all attempts at defence would be useless. The eyrie of the Harpy is built upon lofty trees, and the Indians assert that the same nest is employed for many successive years: the eggs, as far as we can ascertain, have not as yet been found. These remarkable birds are so highly esteemed by the native tribes, that the happy possessor of a live Harpy is regarded with envy and increased respect by his less fortunate neighbours. Upon the women devolves the task of feeding and tending these valuable members of the family party, whose feathers, plucked from the wings and tail twice in the year, afford the owners not only the means of barter for any article they may desire, but are employed as much-coveted decorations for the head-dress and accoutrements of a warrior. In Peru, the hunter who succeeds in capturing a Harpy is allowed the privilege of taking his prize from door to door, to receive such articles as eggs, maize, or poultry, in acknowledgment of his prowess.

Pourlamaque informs us that in the countries watered by the Amazon, the flesh and fat of the Harpy are considered valuable for healing purposes, both by the native and European inhabitants. Many of these birds have been brought alive to Europe, but they never become tame; when confined, they exhibit the most insatiable voracity, devouring every kind of animal food, but preferring to receive their prey whilst it is still alive. They appear to feel no affection towards those that feed them, and are so extremely ferocious that it is impossible to introduce even one of their own kind into the cage that they occupy.

The SEA EAGLES (*Haliaëtos*) constitute a well-defined group of very large birds, armed with long and powerful beaks, which terminate in an abrupt hook, and rise but slightly above the cere; the tarsi are only partially covered with feathers; the talons are long, sharp, and hooked, and the toes distinctly separate; the wings are large, the third quill longer than the rest, reaching almost to the tip of the broad and more or less rounded tail. The plumage is rich, and usually of a grey colour; the feathers upon the head and nape are only slightly elongated, but terminate in a sharp point; the tail is *usually*, and the head *occasionally*, white.

THE SEA EAGLE.

The Sea Eagle (*Haliaëtos albicilla*) is met with in large numbers upon all European sea-coasts. This species is at least two and a half, generally three feet long, and from seven to eight feet broad; the wing measures two feet, and the tail one foot. The plumage of the full-grown birds is greyish brown upon the head and throat, the body is fawn colour, the wings tipped with black, and the tail with white. The eyes, beak, cere, and feet are yellow. As the Sea Eagle increases in age, the colours of its feathers fade, until the upper part of the body is white, and the lower portion greyish white. The young birds are principally brown, spotted, or mottled, with white beneath, and have a dark tail.

The White-headed Sea Eagle (*Haliaëtos leucocephalus*), the North American representative of the species above described, is somewhat smaller than its European congener, its length not exceeding from two feet four inches to two feet eight inches; its breadth is from six feet to six feet nine inches; its wing measures from twenty to twenty-two inches, and tail ten and a half to eleven and a half inches, according to the sex. The plumage of the old bird is dark brown upon the body, each feather being edged with a lighter shade; the head, upper part of the throat, and tail are of snowy whiteness, and the wings black; the eyes, cere, beak, and feet are somewhat paler than in the preceding species. In the young birds the plumage is almost entirely blackish brown, nearly black upon the head, throat, and nape, and presents a lighter appearance upon the back, wings, and breast, owing to the feathers having a white edge. The beak is dark grey, the cere greenish yellow.

THE HARPY EAGLE (*Harpyia destructor*).

The Sea Eagle is found throughout the whole of Europe and a large part of Asia; it likewise visits Africa regularly during the winter months. It is certain that more than one species inhabit the European continent, as those found in the more northerly latitudes greatly exceed in size those of Southern Europe. We cannot do better than lay before our readers the description of the habits of this bird as given by Audubon. Near the border of some large stream, "this ruthless tyrant may be seen perched in an erect attitude on the highest summit of the tallest tree, from whence his glistening but stern eye looks down upon the scene beneath. He listens attentively to every sound, glancing now and then around, lest even the light tread of the fawn should pass unheard. His mate is perched on the opposite bank of the river, and, should all be silent, warns him by a cry to remain patient. At this well-known call the male partly opens his broad wings, inclines his body a little downwards, and answers to her voice in tones not unlike the laugh of a maniac; the next moment he resumes his erect attitude, and all is again silent. Ducks of many species, the Teal, the Widgeon, the Mallard, and others, are seen passing and following the course of the current; but the Eagle heeds them not, they are at this time beneath his attention. The next moment, however, the wild trumpet-

THE SEA EAGLE (*Haliaëtos albicilla*).

like scream of a yet distant but approaching swan is heard. A shriek from the female Eagle comes across the stream, for she is fully as alert as her mate. The latter suddenly shakes himself, and with a few touches of his beak arranges his plumage. The snow-white bird is now in sight, her long neck is stretched forward, her eye is on the watch, vigilant as that of her enemy; she approaches, however, and the Eagle has marked her for his prey. As the Swan is passing the dreaded pair, the male Eagle starts from his perch with an awful scream, that to the Swan's ear brings more terror than the report of a gun. Now is the moment to witness the Eagle's powers: he glides through the air like a falling star, and comes upon the timorous quarry, which, in an agony of despair, seeks by various manœuvres to elude the grasp of his cruel talons. It mounts, it doubles, and willingly would plunge into the stream, were it not prevented by the Eagle, which—long possessed of the knowledge that by such a stratagem the Swan might escape him—forces it to remain in the air, by attempting to strike it with his talons from beneath. The poor Swan has now become much exhausted, and its strength fails it; it is almost at its last gasp, when its ferocious pursuer strikes with its claws the under side of its wing, and, with irresistible power, forces the bird to fall in a slanting direction upon the nearest shore. And now the Eagle presses down his powerful feet, and drives his talons deep into the heart of the dying Swan; he shrieks with delight as he feels the last convulsions of his prey, and the female, who has watched every movement of her mate, now sails to the spot to participate in the gory banquet."

Space will not allow us to quote Audubon's description at greater length, and we must, therefore, endeavour to give particulars of the habits of the Sea Eagles in as few words as possible. All the various species of these birds pass their entire lives upon or in the immediate vicinity of the sea-coast, only ranging further inland during the time that elapses between leaving the nest and choosing a mate. As far as we can ascertain it is an extremely rare occurrence to find a pair of Sea Eagles building upon forest trees, even when the latter are situated in well-watered districts, if at any great distance from the sea-coast. Except during the breeding time they are social, and pass the night together, selecting trees, rocks, or, when the weather is warm, small islands as their resting-places. At the first dawn of day the whole party is astir, and hastens at once in pursuit of food, usually preferring such prey as Ducks, Auks, fish, or the smaller Cetaceans. Homeyer mentions having seen these bold and powerful birds overcome a fox, in spite of the cunning usually displayed by the wary quadruped in eluding danger. Sheep and goats are frequently destroyed. The Sea Eagles dive deep into the water to obtain fish, seize young dog-fishes as they swim close to the mother's side, and have been known even to carry off children. In Kamschatka it is not uncommon for these tyrants of the coast to be drawn under water and drowned, whilst contending with a dolphin or sturgeon; Lenz mentions having seen a Sea Eagle on one occasion seize one of the latter, which was too heavy to be raised from the water; all endeavours of the sturgeon to drag its enemy beneath the waves proved fruitless; the bird would not relinquish its hold, and both floated along together, presenting the appearance of a skiff in full sail. At last some men, who had been attracted by so strange a sight, came up to the struggling combatants in a boat, and succeeded in capturing them both.

In comparison with the flight of the True Eagle, the movements of the Haliaëtos in the air are slow and heavy; upon the ground, however, it moves with great facility, and can dive to a certain depth. In the development of its senses it is not inferior to its more noble relatives, but, unlike them, combines so much cruelty and rapacity with its courage as to deprive its disposition of that majesty popularly attributed to the King of Birds. The breeding season commences about March, and though each male has but one mate during its entire life, many and frequent are the battles that arise about the possession of these often very hardly-earned partners. Count Wodzicki gives an interesting account of the pertinacity and fury with which these disputes are sometimes carried on. Two male Eagles, he tells us, that came under his own observation, fought almost incessantly, falling upon each other with beak and claws, and rolling upon the ground until their feathers flew in all directions and blood flowed. During these encounters the female sat apart, and rewarded the victor by her caresses, with the utmost indifference as to which of the two should obtain her for his mate. After a fortnight spent in constant battles, the strongest bird remained for the time in possession of the field, but no sooner did the pair leave their eyrie, after rearing their young family, than the disappointed rival at once renewed his attacks with so much ferocity as to kill his adversary, after a short but severe struggle.

The eyrie of the Sea Eagle is a large structure, from five to seven feet in diameter, and from one and a half to two feet high, formed externally of branches as thick as a man's arm, and lined with twigs; the interior is rendered warm and soft with down plucked from the mother's breast. The brood consists of from two to four eggs, about three inches long; the shell is thick, rough, and coarsely grained, sometimes white without any markings, and occasionally spotted with red or brown. What period of time elapses before the nestlings escape from the egg is not yet known, but it has been ascertained that both parents assist in the work of incubation. The young do not leave the nest until from ten to thirteen weeks after their birth, and even then return to it at night; it is only as autumn approaches that they finally withdraw from parental care. The Sea Eagle is extremely shy, and therefore captured with great difficulty. In Norway small stone huts are erected for this purpose, outside which a piece of flesh, fastened to a string, is laid upon the ground; the other end of the string is held by a man within the hut, who no sooner perceives that his bait is taken, than he draws up the piece of meat, which the bird will not relinquish, and by this means usually succeeds in bringing the huge creature to close quarters, and killing it or making it prisoner. When caged the Sea Eagle soon becomes tame, and learns to distinguish its friends amid a crowd of strangers; indeed, so thoroughly does it accustom itself to its new life, that one with which we were familiar, having escaped from confinement, used to return every day to visit its companions, and was at last re-captured while perched upon their cage. These Eagles have been killed in various counties in England, and are not uncommon in the rocky parts of the western and northern counties of Ireland; they are said to be common in Scotland, and breed in the Hebrides, Orkney, and Shetland. Dr. Heysham, in his catalogue of Cumberland animals, says that they breed occasionally in the neighbourhood of Keswick and Ullswater.

THE AFRICAN SCREAMING SEA EAGLE.

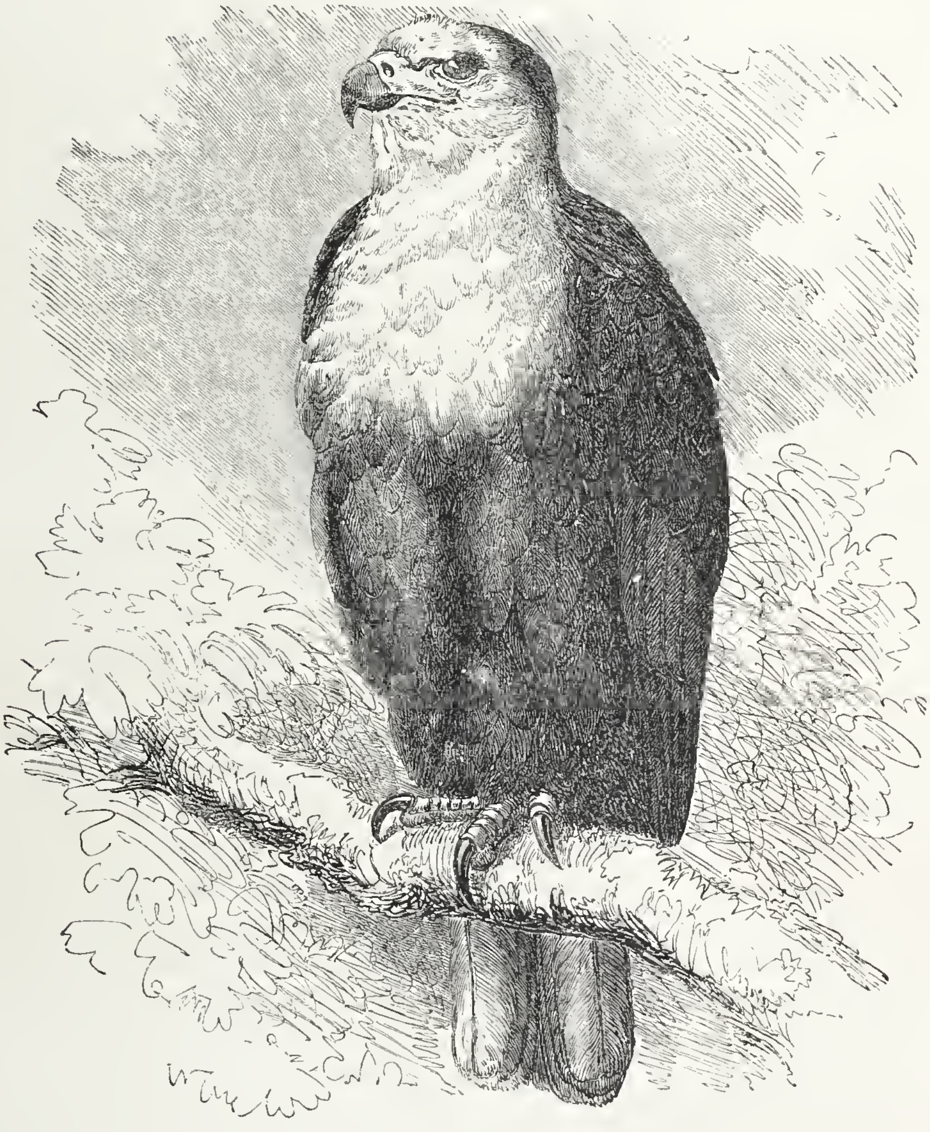
The African Screaming Sea Eagle (*Haliaëtos vocifer*) is pure white upon the head, throat, nape, and upper part of the breast and tail; the mantle and quills are blueish black; the edges of the wings, and underside of the latter, are of a rich brownish red; the eye-rings, cere, and feet, light yellow; and the beak blueish black. In the young birds the plumage on the upper part of the head is blackish brown, mingled with white; the nape and back of the head, white, intermixed with brownish grey. The upper portion of the shoulders, and lower part of the back, are white, the feathers tipped with brownish-black spots; the front of the throat and upper part of the breast are white, streaked with brown; the rest of the lower portions of the body being entirely white; the quills are brown, and white at the root; the tail-feathers white, spotted and tipped with brown. The plumage is moulted many times before the bird appears in its full beauty. This species is about twenty-eight inches long; the wing measures nineteen and the tail six inches.

The Screaming Sea Eagle was first seen by Le Vaillant in South Africa, afterwards by other travellers in Western Africa, and by ourselves in the interior of that continent, where it appeared to live exclusively upon the banks of the Blue and White Nile. Le Vaillant, on the contrary, found it on the sea-coast, and only exceptionally near large rivers. It is, however, in the primitive forests of

Soudan that these beautiful birds are seen in their full glory, and, as they perch side by side among the foliage, afford a spectacle that cannot fail to rivet the traveller's attention, even should he have been long accustomed to the wonders of the African continent. In its life and habits this species resembles its congeners. It lives in pairs, each couple occupying a certain district, usually about half a mile in extent; over this they range from early morning till noon, when they rise into the air and entertain themselves with a variety of evolutions, meanwhile uttering yells that can be heard at a considerable distance. During the afternoon and evening, they sit side by side upon the branch of a tree occasionally bowing their heads, spreading their tails like a fan over the extremities of their wings, and screaming loudly should any strange object appear. Each couple has a favourite resting-place, to which they resort with unfailing regularity. At night they prefer to seek shelter in the inmost recesses of their leafy retreats. We found these birds so entirely without fear at the approach of man as to allow a shot to whistle past them without any indication of alarm: nevertheless, Le

THE WHITE-HEADED SEA EAGLE (*Haliaëtos leucocephalus*).

Vaillant speaks of them as shy and cautious. The food of the Screaming Sea Eagle consists of fish and carrion, the former is obtained by swooping upon it from a considerable height; the prey is generally carried to the water's edge, and there devoured. We were on one occasion much amused by observing the manner in which a little bird (*Hyas Ægypticus*) assisted in the demolition of a large fish that had been safely landed and stripped of its flesh by one of these Sea Eagles. The small but courageous pilferer ran with the rapidity of lightning to the spot, seized upon a few scraps, and hurried away to devour them at a distance, repeating this operation till its hunger was appeased, the Eagle meanwhile turning its head from time to time to observe its manœuvres, but without making any attempt to interfere with its operations. Towards other birds of prey the Sea Eagle is far from exhibiting this amiable disposition, and usually succeeds in overcoming even the Vulture, should the latter interfere with its prey. In Soudan, the period of incubation commences with the rainy season. The eyrie is built upon high trees, or pieces of rock, and is formed of branches lined with some warm and elastic material; the brood consists of two or three purely white eggs.



THE AFRICAN SCREAMING SEA EAGLE (*Haliaëtos vocifer*).

When caged these birds soon become very tame, and accustom themselves so easily to our climate, that they may be allowed to fly about in the open air.

THE OSPREY.

The Osprey, River Eagle, or Fish Hawk (*Pandion Haliaëtos*), although included in this extensive group, may be regarded as forming a connecting link between the Eagles (from which it differs in many essential particulars) and the Kites. In this species the body is comparatively short and powerful, and the head large: the beak rises from immediately beneath the cere, and terminates in a very large hook; the wings, in which the third quill is the longest, extend beyond the by no means short tail. The legs are very robust, and only covered with feathers above the heel; the tarsi are unusually strong, and protected by thick, small scales; the toes, the outermost of which can be turned either backwards or forwards, are short, and armed with short and powerful talons. The plumage of the Osprey is peculiarly smooth and compact; its prevailing colour is yellowish white, marked upon the head and nape with longitudinal blackish brown streaks, the feathers on these parts terminating in sharp points; the rest of the upper part of the body is brown, each feather being bordered with a lighter shade; the tail is brown, striped with black. The under portions of the body are white, or yellowish white; a dark streak passes from the eyes to the middle of the throat, and the breast is adorned either with a collar or shield-shaped patch of brown feathers, which are in some cases distinct, but in others scarcely visible. The eye is bright yellow, the cere and feet lead colour, while the beak and claws are of a brilliant black.

This bird is found throughout the entire continent of Europe, the greater part of Asia, and upon the rivers of Northern and Western Africa. Many naturalists are of opinion that the American Ospreys should be regarded as the same species, so very slightly do they differ from their European representatives, either in their appearance or manner of life. The River Eagle lives almost exclusively upon fish, and passes its life in such places as afford a plentiful supply; it only visits northern regions during the summer months, remaining throughout the rest of the year in warmer latitudes. During the course of its migrations, every piece of water over which it passes is subjected to close inspection, and even the finny inhabitants of the humblest pond are not safe from this most destructive and voracious marauder. Its eyrie is usually constructed upon a high tree, and formed of moss and twigs; the eggs, two or three in number, are greyish white, marked with pale yellowish red spots. Owing to the great strength of its wings, this bird is capable of flying to a very considerable distance from its roosting-place, to which, however, it always returns for rest or shelter. As soon as the mist has cleared away from the surface of the water, the business of the day commences, and about noon the Osprey may be seen careering through the air, preparatory to descending by a series of graceful evolutions upon the river or lake, over which it has hitherto sailed at a considerable altitude. At the first indication of a fish being about to rise, the observant bird arrests its progress, hovers for a moment above the spot, and then swoops down with great velocity upon its prey. All attempts to elude the fierce destroyer are useless, for even should the Osprey be completely submerged during the struggle, it rises again with ease, bearing its prize safely grasped by the back, shakes the water from its wings, and flies away with its victim to a neighbouring tree, or, if too heavy, drags it to the bank there to be devoured. The only exception to this mode of fishing is when the Osprey perceives an eel in the vicinity of the water, this it pounces upon, and transfixes with its "iron talons," and then, after tearing it to pieces, devours some portions of the body, entirely rejecting the entrails. Next to the Otter, this Eagle may be considered as the most destructive of all the many enemies to whose attacks well-stocked ponds and rivers are incessantly exposed, and for this reason it is regarded with great hostility by all cultivators of fish. In North America alone it is treated with favour, being supposed, by a popular superstition, to bring luck to the district in which it builds its nest. With all varieties of swimming birds the Osprey lives upon the most amicable terms, but Crows, Swallows, and Wagtails pursue and harass it so perseveringly that it will often throw down its hardly-earned booty in order to escape from their unrelenting persecution. Traps baited with fish are employed in North America by those who wish to obtain these birds alive; so wary are they, however, that their capture is attended with great difficulty. When caged, even if supplied with plenty of fresh fish, they rarely survive imprisonment for more than a few months, and are, for this reason, numbered amongst the greatest rarities in our aviaries.

In England, as Yarrell informs us, specimens of this bird have been obtained in Surrey, Sussex, and almost every county on the north-east coast. Two or three have been killed in Durham, and they are said to be met with on the north-west coast of Scotland rather more frequently than elsewhere.

Sir W. Jardine says that in Scotland, "a pair or two may be found about most of the Highland lochs where they fish, and, during the breeding season, build on the ruined towers so common on the margins or on the insulated rocks of these wild waters. The nest is an immense fabric of rotten sticks—

> 'Itself a burden for the tallest tree—'

and is generally placed, if such exists, on the top of the chimney, or, if this be wanting, on the highest summit of the building. An aged tree may sometimes be chosen, but ruins are always preferred, if near water. They have the same propensity for returning to a station with those of America, and, if one is shot, a mate is soon found and brought to the ancient abode. Loch Lomond, Loch Awe, Killchurn Castle, and Loch Menteith, have long been breeding places."

The KITES (*Milvi*) constitute a group of Falcons, many species of which are to be met with in all parts of the world. Of these birds it is almost impossible to speak in general terms, so very various is their appearance; and we must therefore confine ourselves to saying that they are for the most part slender in shape, with short necks, and small or moderate sized heads. Their wings are always long and pointed, and usually rather narrow; the tail varies considerably in length, but is generally very long and forked—really *short* tails are only exceptionally met with in this group. The foot, which is either long and weak or small and heavy, is invariably furnished with short toes; the beak is moderate, usually curving directly from its base, and hooked at the extremity, near which it occasionally presents a tooth-like appendage; the claws are slightly rounded and very sharp. The plumage is extremely soft and tolerably dense about the region of the head, forming in some instances a kind of ruff of long feathers which surround the ears, and, when spread out, materially assist the sense of hearing. To these characteristics we can only add that their colours are sometimes pale, and sometimes exceedingly bright. All the various members of this group are remarkable for the excellence of their flight, which differs essentially from that of any other birds of prey. Unlike the True Falcons, their movements are extremely calm and regular—indeed, they may be said to travel through the realms of air without any direct stroke of the wing, a peculiarity which occasionally gives a rocking motion to the flight of some species, the points of the wings being at such times held above the plane of the body. When upon the ground, however, their movements are by no means effected with equal facility—some species walk with ease, while others appear to progress with great difficulty. In all these birds the sense of sight is very highly developed, and such as possess the long feathers around the neck hear with great acuteness; of the delicacy of their sense of taste we cannot speak with any certainty. As regards intelligence, the Kites are decidedly inferior to other Falcons; they are cautious and persevering, cunning and inquisitive, extremely rapacious, but so destitute of courage that we must stigmatise them as mere thieves, amongst whom the reckless deeds of daring often wrought by other members of the fraternity are entirely unknown; indeed, a Kite always prefers to follow in the wake of some other bird of prey, in order to obtain the refuse of its hardly-earned spoil, rather than engage in any struggle on its own account. Great diversity is observable in the mode of life adopted by the various species of Kites; the greater number live entirely apart, not merely from other birds, but from their own kind, while some fly about in pairs—only a few dwell together in small parties: these latter, however, are very sociable, and much attached to their companions. All are alike active and restless; from the first dawn of day till twilight has closed in they may be seen winging their way over the face of the country, occasionally pausing in their varied and beautiful gyrations, to descend slowly earthward and snatch the morsel they have espied from afar.

The food of the Kites consists principally of the smaller quadrupeds, defenceless birds, toads, fish, and various insects. Some species subsist entirely upon the latter diet, and hunt their prey in a manner more resembling that of the Swallow than the mode practised by other Falcons; but very few will devour carrion. On the whole, these birds must be regarded as useful to man, though some are very destructive to his property. The eyrie varies considerably in its construction; sometimes it is built upon rocks or in holes of walls, sometimes on church steeples, trees, bushes, or even the bare ground. The number of eggs varies from one to five; both parents assist in the work of incubation, and tend their young with great assiduity. When caged all the members of this group are easily tamed, and some attach themselves to their keepers, but they entirely lose their vivacity, and are quite unable to survive any lengthened confinement. Among the Bashkirs some species are trained to assist their masters in the chase.

THE SHORT-TAILED KITE.

The Short-tailed Kite, sometimes called the Mountebank (*Helotarsus ecaudatus*), is a very remarkable bird, inhabiting the continent of Africa, from sixteen degrees north latitude as far as the Cape of Good Hope. In appearance it reminds us of an Eagle, and is recognisable by its short, powerful, compact body, short neck and large head. The wings (in which the second quill is longer than the rest) are of great length, the tail is unusually short, as are the tarsi; the latter are, however, very strong, and well protected by scaly plates. The toes are of medium size, and armed with slightly curved and blunt talons. The plumage is unusually rich in texture, and consists of large broad feathers, with which the head in particular is profusely covered. The coloration of the plumage in adult males is as striking as its general appearance; the head, neck, fore, under, and hinder parts of the body are of a beautiful pale black; the entire tail and upper portion of the back are red. The exterior wing-covers vary from pale brownish red to cream colour; the primary quills are black, the secondaries and shoulder feathers grey, tipped with black, so that these latter form a black border to the wing, the lower side of which is of silvery whiteness. The eye is a beautiful brown, and glitters with a golden light; the back is reddish yellow at the base, and greyish blue towards the tip. The cere, and a bare place round the eyes, are blood red, spotted with reddish yellow. In the young birds the plumage is dark brown, usually deeper in shade on the back than it is beneath, where the feathers have a light greyish brown edge; the feathers upon the throat are light brown, and the secondary quills greyish brown. The eye is reddish brown, the beak, cere, cheek-stripes, and feet blue, the latter shaded with red. The length of the adult female is one foot ten inches, its breadth five feet ten inches; the wing measures one foot nine inches, and the tail not more than five inches. The male is not quite so large.

This remarkable bird, whose extraordinary appearance has caused it to be the subject of many strange superstitions among the natives of Africa, is found throughout the whole of that continent, excepting its most northern portions: it lives principally in mountainous districts, but nevertheless constantly makes its appearance in all parts of the widely-extended plains; yet, notwithstanding the frequency with which this bird is seen by travellers, it is by no means easy to obtain possession of a specimen, as it usually soars so high when in flight as to be out of gunshot, and will often pass the entire day in thus sailing over extensive tracts of country; at noon, however, it may generally be found slaking its thirst at a pool of water, or taking a short nap upon a tree near some stream. The afternoon and early evening are spent in the pursuit of food, and it is only when darkness has fully closed in that the "Mountebank" seeks shelter for the night. Le Vaillant mentions having seen this species flying about in pairs, but we ourselves have always found it solitary; during the breeding season alone it is to be found associated with others of its kind in small parties. Speke tells us that the Short-tailed Kite is regarded by some of the African tribes with superstitious dread, its shadow being supposed to bring ill-luck, while others, on the contrary, venerate it on account of its imaginary powers of healing by means of rare medicinal roots which they imagine that it flies to a great distance to obtain. The latter notion has no doubt arisen from the fact that the snakes so frequently devoured by this bird have been mistaken for pieces of roots, when borne by their destroyer to its resting-place.

THE SHORT-TAILED KITE (*Helotarsus ecaudatus*).

From the strange antics and remarkable appearance of this Kite, it is called by the Abyssinians "The Monkey of the Sky;" and those who have seen it alternately tumbling, gliding, rising, or falling through the air will own that the name is not ill applied. Only when on the wing can the beauty of the Mountebank be fully appreciated; while in the trees its appearance is most ungainly—the body is inflated till it looks like a ball of feathers, and the plumage hangs loose about the neck and face, the head being meanwhile turned about in all directions, after the manner of the Screech Owl. The sight of this bird, like that of other Kites, is very keen, and its powers of hearing excellent. In its wild state it is extremely shy, even towards its congeners; and though it will often engage in serious conflicts, is by no means courageous. In captivity it soon becomes exceedingly tame, and, unlike other birds of prey, quite enjoys being stroked. But little care, either as regards food or climate, is required to keep the Mountebank in health when caged, as it can endure almost any variety of temperature. Gazelles, lambs, sick sheep, young ostriches, and carrion are said to constitute its favourite food, but we cannot vouch for the truth of this statement, as our own observations have led us to the conclusion that this species subsists chiefly upon reptiles, and is equally destructive to snakes of all kinds, whether poisonous or not. When in pursuit of food of this description, it is immediately attracted by the conflagrations that frequently break out upon the vast plains of their native land, and will fly quite close down to the line of fire, snatching its victims as they vainly attempt to escape from the dense cloud of smoke in which they are enveloped; they will, no doubt, if driven by hunger, occasionally eat carrion. The period of incubation commences with the dry season, when, owing to the parched state of the ground, snakes are easily discovered among the burnt-up grass. The eyrie is usually built at the summit of a high tree, and the brood consists, according to Le Vaillant, of from three to four eggs, but we ourselves have never succeeded in finding more than two.

The GLIDING KITES (*Elanus*) are common in all parts of the world, with the exception of Europe, where they are very rarely met with. This group is composed of four species, resembling each other in an unusual degree. All have compact bodies and thick plumage; their wings, of which the second quill is longer than the rest, extend beyond the tip of the short, slightly excised, and by no means powerful tail. The feet are short, powerful, and only partially covered with feathers, the middle toe is longer than the tarsus, and all the toes are armed with very sharp, hooked talons; the beak, which is short and comparatively high, is much bent, and terminates in a long hook; the margin of the upper mandible bulges slightly outwards. The plumage is extremely silky in its texture, and resembles that of the Owl in the formation of its feathers.

THE TRUE GLIDING KITE.

The TRUE GLIDING KITE (*Elanus melanopterus*) is of a beautiful greyish blue upon the upper portions of its body, and white beneath; the brow and shoulders are black; the eyes a brilliant red; the beak black; the cere and feet orange. The young are brownish grey on the back, and light yellow, streaked with brownish yellow, on the under parts of the body; most of the feathers are surrounded by a white border. The length of the male is about thirteen and a half and its breadth thirty inches; its wing measures eleven and a half and its tail five and a half inches. The female is somewhat larger. This Kite principally inhabits such tracts of country as are diversified by woodlands and pastures, and usually avoids extensive forests; with this exception, it is found throughout the whole of North-eastern Africa, and is particularly numerous in Egypt. It always lives in pairs, never flying about in parties except when engaged in instructing its young. The couples, however, live close to each other, and may, therefore, often be seen apparently enjoying a social excursion, when in fact, each family is entirely regardless of its neighbours. In its habits the Gliding Kite bears some resemblance both to the Buzzard and the Owl, and is easily recognised either as it flies with the tips of its wings raised much above its body, or when seen quietly perched and glowing with dazzling brilliancy in the rays of a tropical sun. If in pursuit of prey, it glides along at a considerable height above the ground, and, when it descries a victim, hovers for a few moments before swooping heavily down with wings close to its sides; should it be a mouse, or a grasshopper that is thus hastily seized, the former is carried off to a tree to be devoured, the latter immediately swallowed. Young birds are often eaten, but mice, we believe, constitute its principal subsistence. So entirely is this species free from any dread of man, that in Egypt it flies about in the fields close to the native labourers, and will even build its nest upon such orange-trees as are constantly visited by the gardener; it soon, however, becomes cautious if pursued, and learns to keep at a very respectful distance from the European gun. In its relations to such of its feathered companions as are small or harmless, the True Gliding Kite is quite inoffensive, but it pursues the larger birds of prey with loud cries whenever they appear. The voice of this species resembles that of the Tree Falcon; the notes are, however, more prolonged, almost like a whistle, and can be heard at a great distance. In Egypt the period of incubation takes place in the months that correspond with our spring, and in Soudan at the commencement of the rainy season: we have twice found young birds as early as March. The nests were flat in shape, and placed upon low, thickly-foliaged trees, at not more than twenty feet above the ground; they were built of small twigs, and lined with fine fibres and blades of grass, over which was laid a snug bed of wool and mouse's hair. The eggs vary in colour, some being greyish white, thickly but irregularly spotted, and streaked with reddish brown, insomuch that the whitish colour of the shell is scarcely visible. Jerdon mentions these eggs as being pure white; their length is one and a half inches, and their diameter, in the thickest part, about fourteen lines. If taken young from the nest, the Gliding Kite is capable of being made very tame, and soon accustoms itself to life in a cage.

The HOVERING KITES (*Ictinia*) are American birds, very nearly allied to those we have just described. This group consists of but two species. In these birds the wings—in which the third quill is longer than the rest—are long and pointed; the tail of medium length, and slightly sloping; the feet powerful, but of no great size; the toes are comparatively short, and armed with round and very decidedly curved talons; the beak is short, nearly as broad as it is high, and furnished at its base with rudimentary tooth-like appendages; the plumage is thick and soft, and the individual quills of moderate size.

THE MISSISSIPPI KITE.

The MISSISSIPPI KITE (*Ictinia Mississippensis*) is about fourteen inches long and thirty-six broad. The head, nape, and entire upper portions of the body are blueish white; the back, wings, and tail, black, enlivened by a greenish gloss; the secondary quills are tipped with greyish white, the outer web of the primaries being of a brilliant red; the eye is deep red; the beak, and a place round the eye, black; the foot is bright red. "When spring arrives," says Audubon, "the Mississippi Kite extends its migrations as high as the city of Memphis, on the noble stream whose name it bears, and along our eastern shores to the Carolinas, where it now and then breeds, feeding the while on lizards, small snakes, and beetles. At times, congregating to the number of twenty or more, these birds are seen sweeping round some tree, catching the large locusts which abound in those countries at an early part of the season. The Mississippi Kite arrives in Lower Louisiana about the middle of April, in parties of five or six, and confines itself to the borders of deep woods, or to those near plantations, not far from the shores of the rivers, lakes, or bayous. It never moves into the interior of the country; plantations lately cleared, and yet covered with tall, dying, girted trees, placed near a creek or bayou, seem to please it best.

"Its flight is graceful, vigorous, protracted, and often extended to a great height, the Fork-tailed Hawk being the only species that can compete with it. At times it floats in the air as if motionless, or sails in broad, regular circles, when, suddenly closing its wings, it glides along to some distance and renews its curves. Now it sweeps, in deep and long undulations, with the swiftness of an arrow, passing almost within touching distance of a branch on which it has observed a small lizard, or an insect it longs for, but from which it again ascends disappointed. Now it is seen to move in hurried zig-zags, as if pursued by a dangerous enemy, sometimes seeming to turn over and over like a Tumbling Pigeon; or it may be observed flying round the trunk of a tree to secure large insects, sweeping with astonishing velocity. While travelling, it moves in the desultory manner followed by Swallows, but at other times it is seen in company with the Fork-tailed Hawk, at a great elevation, among the large flocks of Carrion Crows and Turkey Buzzards, dashing at the former and giving them chase, as if in play, until these cowardly scavengers sweep downwards; it then abandons this apparently agreeable sport to the Hawks, who now continue to gambol undisturbed. When in pursuit of a large insect or a small reptile, this Kite turns its body sideways, throws out its legs, extends its talons, and generally seizes its prey in an instant. It feeds while on wing, apparently with as much ease and comfort as when on the branch of a tall tree. It never alights on the ground; at least, I have never seen it do so, except when wounded, and then it appears extremely awkward. It never attacks birds, or quadrupeds of any kind, with a view of destroying them for food, although it will chase a fox to a considerable distance, screaming loudly all the while, and soon forces a Crow to retreat to the woods."

The eyrie of the Mississippi Kite is always placed at the summit of a lofty tree, the magnificent white oaks and magnolias with which the Southern States are so plentifully adorned being usually preferred. The nest is very simple in its construction, resembling that of the Common Crow; it is composed of twigs thrown lightly together, and lined with Spanish moss, dry leaves, and the bark of the wild vine. The eggs, two or three in number, are round and of a green colour, thickly covered with black or dark chocolate spots. Both parents assist in the work of incubation, and protect their young with so much ardour that they will even attack men, should they attempt to molest the little family. The nestlings when first fledged resemble their parents, and attain their full beauty of plumage before their first migration. The capture of these birds is not difficult, for, though they fly at a very considerable height, they are by no means shy, and, when perched at the summit of a lofty tree, are easily brought down with the gun.

The CROOKED-BILLED KITES (*Cymindis*) are recognised by their lengthy bodies and unusually long and pointed wings, in which the fourth quill is the longest; the tail is of considerable length, composed of broad feathers, and rounded slightly at its tip; the feet are short and weak, the tarsi slender, and partially covered with feathers on the upper side; the toes are feeble, and furnished with thin, but slightly curved and very long talons; the beak is high, and much compressed at its sides; the culmen is narrow, and the margin straight; the upper mandible extends considerably beyond the under portion of the beak, and terminates in a hook; the plumage is very rich, and composed of large feathers; its markings resemble those of the Hawks.

THE BUZZARD KITE.

The Buzzard Kite (*Cymindis uncinatus*) is sixteen inches in length and thirty-three inches broad; the wing measures eleven and the tail seven inches. The plumage of the adult male is uniform light grey, shaded with blue, somewhat lighter on the lower parts of the body; the wing and tail-feathers are of the same pale shade, striped with deep grey—a broad white line passes over the base of the tail-feathers; the eye is of a pearly hue; the upper mandible blackish grey, the lower whitish yellow; the cere, cheek-stripes, and a spot near the eyes, are greyish green; the margin of the mouth yellow; the feet orange colour. The female is of a paler grey, with grey and black waved markings on the wings; the under part of the body is striped with white; and below the broad white streak upon the tail passes a succession of alternate black and grey lines. The back of the young bird is greyish brown, each feather being edged with red; the body underneath is light reddish yellow, transversely striped with rust-red; the primary quills are blackish brown, adorned with light streaks, and bordered with white. When seen from above, the tail exhibits two yellowish grey stripes; beneath, it presents lines of reddish yellow, and is tipped with the same shade.

We learn from the Prince von Wied, and other authorities, that these birds are found throughout a large portion of South America. They are most numerous on the outskirts of forests, more particularly of such as are in the immediate vicinity of the settlements of the planters; and lead for the most part a solitary life. Their appearance is very beautiful, and their flight varied and rapid. The stomachs of such as the Prince von Wied shot were found to contain insects and snails, but they will also eat birds and small quadrupeds. In disposition this species is courageous and fierce. The eyrie is built upon lofty trees, and is generally quite inaccessible.

THE SYAMA.

The Syama or Baza (*Baza lophotes*) is the most remarkable of the many species of Kites with which we are acquainted. Its length is from thirteen to fourteen inches, its breadth thirty inches; the wing measures nine, and the tail five inches. The beak of this bird is small, much curved and furrowed at the sides; the upper mandible is furnished with two sharp teeth on each side, and the lower one has three or four similar appendages towards the tip. The wings are of moderate size, the third quill being longer than the rest; the tail is square, and of medium length; the tarsi are short, thick, and feathered on the upper side; the toes short, the talons small, and very much curved. The plumage is rich, and forms a crest upon the head; the upper portions of the body and hose are of a brilliant greenish black, as are also the tail and wing-covers; the outer web of the secondary quills is a beautiful nut-brown, the feathers on the shoulders, and some of those on the wing-covers, are white, spotted with brown; these form an uninterrupted white line across the entire wing. The lower parts of the body are white, with five or six nut-brown bands on the sides of the belly. The quills of the wings and tail are of an uniform pale blueish tint.

Jerdon informs us that this bird is found throughout the whole of India; it is, however, scarce in the southern provinces and near Calcutta, but occurs more frequently in the region of the lower Himalayas. It subsists principally upon insects, which it procures from within the recesses of the forests. The Syama is seldom seen in flight; the crest is usually carried erect. These scanty particulars comprise all the information respecting this species that has as yet been obtained.

THE TRUE KITES.

Such of the True Kites as can be united into one group are recognisable by their very lengthy body, small head, feeble beak, large wings, and long, more or less forked tail. Two species of this family are known to breed in Germany, and others are met with in different parts of Europe.

THE BLACK KITE.

The Black Kite (*Hydroictinia atra*) inhabits the southern provinces of Germany, Russia, and Central Asia, as far as Japan. This species is from twenty-one to twenty-three inches long, and from forty-eight to fifty broad; the wing measures sixteen, and the tail from eleven to twelve inches. The distinguishing characteristics of this bird are its somewhat delicate beak, furnished with well developed, tooth-like appendages, and terminating in a long hook; and the shape of its wings, in which the fourth quill is the longest, and the first shorter than the seventh; its tail is, moreover, black and forked. The plumage, composed of narrow feathers, is of a dirty white upon the head, throat, and neck, streaked longitudinally with dark greyish brown; the breast is reddish brown, varied with still darker markings; the feathers on the breast and the hose are rust-red, with black shafts; those on the back, shoulders, and wing-covers are dark brown, with a narrow light border; the upper wing is rust colour, each feather being edged with brownish white, and spotted with black on the shaft. The quills, which are tipped with brownish black, are whitish upon the inner web; the tail is brown, and decorated with from nine to twelve narrow brown and black lines; the beak is black, the cere yellow, the eyes brownish grey, and the feet orange. The plumage of the young is of an uniform brown, the cere and feet of a paler yellow than those of the adult birds; the beak is black, and the eyes dark brown.

The Black Kite is replaced in Africa and South-western Asia by a species known as the Parasite Kite, for which it is frequently mistaken. The former is very commonly met with in Russia and the eastern parts of our continent, where it frequents such woodland districts as are in the vicinity of water, to which it flies daily in search of food, returning at night to sleep upon the trees. The season for migration commences about October; but this bird seldom journeys farther south than Egypt, and returns to its summer quarters in the month of March. The Black Kite is in many respects highly endowed, though by no means worthy to be classed among the nobler Birds of Prey. Its flight is light, hovering, and capable of being long sustained; when upon the ground, its movements are also more graceful than those of most of its congeners, the body and head being held erect. The sight of this species is remarkably acute, and its other senses by no means deficient; its instincts are keen, yet, in spite of these many gifts, the Black Kite must be regarded as one of the most audacious and shameless beggars to be found among the feathered tribes. Too lazy and cowardly to kill its own prey, it devotes its life for the most part to theft, stealing habitually the quarry other birds have obtained, and following and tormenting them with such pertinacity, that at last, out of sheer weariness of its importunities, they throw down the coveted prize; it will, however, destroy rats, mice, and other small quadrupeds, and frequently captures fishes during the spawning season.

Notwithstanding that the cowardice of this bird is so great that a clucking hen could scare it away, it manages to render itself a most troublesome visitor to the farmyard, where its cunning and adroitness stand in the stead of nobler qualities, and enable it, unobserved, to steal many a fat chicken or duckling. When other food is scarce it will consume frogs, and is always attracted by carrion. The breeding season commences about April or May, and is inaugurated by a series of graceful evolutions through the air, in the performance of which both male and female take a share, the former continuing frequently to soar aloft for the entertainment of his mate during such time as family cares confine her to the nest. The eyrie is placed upon a very high tree, and most artistically constructed of dry twigs, with some soft and elastic material, such as moss, hay, shreds of cloth, or even cuttings of paper. The brood, which consists of three or four yellowish or greyish white eggs, either marked or spotted with brown, is tended by the female with great care and affection. The young are reared upon mice, frogs, and occasionally small birds; they remain for a long time in the nest, and even some weeks after leaving it are nourished and instructed by their parents; when this period of tuition is over they separate, each bird going its own way, and beginning life for itself. Towards autumn they all again assemble, previous to setting forth upon their winter migrations. When in captivity the Black Kite soon learns to attach itself to those that feed it.

THE GOVINDA.

The Govinda (*Hydroictinia Govinda*), as the Indian species is called, is found, according to Jerdon, throughout the whole of Hindostan, up to an altitude of 8,000 feet, and is one of the birds commonly met with in India, where it frequents all large towns or populous places, and proves itself a most bold and impudent thief. It will follow travellers in hopes of being able to steal their food, and even snatch a dainty morsel from the table, under the very eyes of its lawful owner. It not only drives its own species and other birds from a meal that has caught its fancy, but often pounces upon fine full-grown Hens and Parrots. Bligh informs us that it will also eat Crows. According to our own observations, the Govindas often congregate in large companies, on which occasions they seem to come together from all parts of the neighbourhood, to hold, as it were, a kind of "palaver," and compare their experiences. The Govinda pairs about Christmas, and breeds from January to April. The nest is placed upon trees or high buildings, and is formed of twigs or branches, lined with some soft material. The eggs are from two to three in number.

THE PARASITE KITE.

The Parasite Kite (*Hydroictinia parasitica*) is found in large numbers throughout the whole of North-eastern Africa, and is a constant frequenter of the banks of the Nile and shores of the Red Sea.

Unlike most of its congeners, this bird always seeks the society of man, and, as its name indicates, obtains its principal means of subsistence, not by its own exertions, but by unceasing thefts and petty pilfering; indeed, amongst the many troublesome members of the feathered tribes by which African towns are visited, the Parasite Kite stands pre-eminent for audacity and persevering cunning. Perched upon a lofty palm-tree or slender minaret, it surveys the people that pass beneath with so keen and appreciative an eye, that we have been sometimes almost tempted to imagine that it was actually capable of understanding what the various signs of daily life indicated, and had made the habits of mankind a subject of most sagacious study. Is a sheep led through the streets on its way to the slaughter-house, this bird is sure to follow in the wake, and obtain more than its share of the pickings. Woe to the buyer in the market-place who may happen to accost a neighbour, in momentary forgetfulness of the basket that contains his dinner! In the twinkling of an eye, the watchful thief has swooped noiselessly down, and is off with the prize before the unlucky owner has had time to turn his head. All attempts to frighten the marauder into dropping its booty are upon such occasions entirely useless. Fear of man it has none, and will snatch a tempting morsel from his hand with as much coolness as it exhibits in defrauding its congeners of their hardly-earned repasts. The nobler Birds of Prey appear thoroughly to despise the miserable thief who is constantly hovering about in order to harass them, and at once throw down their prey, as if in contempt of the wily intruder. We have seen the Peregrine Falcon thus cast away four different captures in the course of a few minutes, each time returning to obtain a fresh supply for its own breakfast. The Parasite Kites are usually seen flying about in flocks numbering some fifty or sixty birds; it is only during the breeding season that they live in pairs. The eyrie of this species is built upon a high tree or steeple, and almost every minaret in Cairo is decorated with several of these structures. The eggs, from three to five in number, are laid about February; by the end of May the young are fully fledged, and quite capable of stealing on their own account. The parents exhibit great attachment and courage in their care of their family.

The general appearance and size of the Parasite Kite corresponds very closely with that of the Black Kite, except that the plumage is somewhat lighter than in that bird, and the beak yellow. This species is called "Hitaie" by the Arabs, that word being supposed to represent its cry, of which the first syllable "hi" is very sharp, and the latter much prolonged. This Kite has been the subject of many amusing Eastern fables.

THE RED OR ROYAL KITE.

The Red or Royal Kite (*Milvus regalis*) differs from those of its congeners already described in the comparative strength and height of its beak, which is, moreover, but slightly hooked at its extremity. The first quill of the wing is as long as the seventh; the tail is long, broad, and much forked. The length of the Royal Kite is about two feet, its breadth four and three-quarters: the wing measures one foot and a half, and the tail fourteen inches. The female is about three inches longer and broader than her mate. The plumage of this species consists of broad feathers of a rust-red colour, spotted and marked upon the shafts with blackish brown. The head and neck are white, streaked longitudinally with brown; the points of the wings are black, the tail is rust colour, striped with dark brown. In the young birds the head is yellowish white, spotted with brownish red, and all the feathers on the under parts of the body have a light edge.

THE PARASITE KITE (*Hydroictinia parasitica*).

The Royal Kite inhabits all the level tracts of the European continent, from the south of Sweden to Spain, and from thence to Siberia, but only appears in mountainous districts during the course of its migrations. They usually make their appearance in Europe about March, and leave for warmer climates in October; when the winter, however, has proved exceptionally mild, some stragglers have been known to remain with us throughout the entire year. The Royal Kites live in pairs, except when about to migrate, at which time they congregate in large parties containing from fifty to a hundred, which fly about in search of food during the day, and pass the night upon trees. These wandering bands extend their flight as far as North-western Africa, but we have rarely seen them in Egypt.

In times not very remote these Kites seem to have played in England the part of scavengers, much in the same way as the Parasite Kite and Govinda now do in India, for Pennant informs us that in the days of Henry VIII. they flew fearlessly about the streets of London, and cleansed them of the mass of filth, which must otherwise have tainted the air with poisonous vapours. To kill one of these feathered scavengers was, in that reign, a punishable offence.

The Royal Kites are indolent and cowardly; they frequently hover for a quarter of an hour in the air without any perceptible movement of the wings, merely steering their course by means of their broad tail, by the aid of which they can likewise soar to an enormous height. When upon the ground their gait is extremely awkward, consisting rather of shuffling hops than of regular steps. In disposition they resemble the species we have already described. Their voice is monotonous and somewhat bleating in its tone, but this sound is varied during the breeding season by a tremulous note, sometimes employed at other seasons to express pleasure or contentment. They live upon small quadrupeds, unfledged birds, snakes, toads, frogs, grasshoppers, beetles, and worms; and though they occasionally annoy the farmer by stealing a chicken, or the sportsman by pouncing upon a young hare, these trifling offences are not worth speaking of when we consider the valuable services rendered by them, for without their most timely aid entire crops would be destroyed. Dozens of mice are often devoured by one Kite in the course of a single day, and incalculable hosts of noxious insects are also consumed by these active but much-reviled friends of the farmer and gardener. When about to breed they prefer taking possession, if possible, of a Falcon's eyrie or Crow's old nest, but should this be impossible, they build much in the same manner as the Kites above described. The eggs, usually two, sometimes three in number, are laid about April, and are white, spotted with red. The female alone broods, and her mate busies himself in procuring food. The young are reared like others of their congeners. The Royal Kite is easily tamed, and, according to our own experience, may be considered as the most interesting and pleasing of all caged Birds of Prey.

THE RED OR ROYAL KITE
(*Milvus regalis*).

THE SWALLOW-TAILED KITE.

The Swallow-tailed Kite (*Nauclerus furcatus*) is a most beautiful member of this group, belonging to Southern and Central America; many of this species have, however, from time to time found their way to Europe, and it may therefore be considered as in some measure belonging to our continent. This remarkable bird is distinguished by its powerful body, short neck, and small but powerful head. Its wings, which in shape resemble those of the Swallow, are long, and gradually pointed; their third quill being longer than the rest. The tail is very long, and so deeply forked that the exterior feathers are twice as long as those in the centre; the beak, which is of no great size, and rather shallow, curves gently from its base, and terminates in an abrupt hook; the margins are straight but furrowed. The feet are small and powerful, the toes short, and armed with sharp and very crooked talons. The plumage is soft, and composed of large feathers. The entire coat of the adult bird is white, if we except the mantle and tail, which are black, but gleam with a metallic lustre; the inner web of the secondary quills is white towards the tip. In young birds the feathers upon the nape and back of the head have black or very dark shafts, the plumage upon the back is grey and lustreless, the lower wing-covers are also tipped with grey, the exterior secondary quills are pure white. The eye is dark brown, the beak black, the cere blueish grey, the feet are greenish blue, and the claws horn colour. The male is somewhat smaller than its mate, from which it is also recognisable by the pure white of the rump and the brilliant black of the wings. The length of this species is about twenty-three inches, its breadth fifty inches; the tail measures sixteen, and the longest tail-feathers twelve inches.

The Swallow-tailed Kites inhabit all parts of South America, from the South of Brazil to the Southern United States, only appearing, however, in the latter region during the summer months. According to Audubon they visit Louisiana and Mississippi about April, and depart in September. Some few penetrate as far as New York and other Northern States, but they are merely stragglers. These Kites generally live in large flocks, that pass their time in sweeping and hovering over the face of the country, or perching sociably amongst the branches of trees, which, when thus occupied, present a spectacle not easily forgotten. "The flight of this elegant species of Hawk," says Audubon, "is singularly beautiful and protracted; it moves through the air with such ease and grace that it is impossible for any individual who takes the least pleasure in observing birds not to be delighted with the sight of it whilst on the wing. Gliding along by easy flappings, it rises in wide circles to an immense height, inclining in various ways its deeply-forked tail to assist the direction of its course, dives with the rapidity of lightning, and, suddenly checking itself, re-ascends, soars away, and is soon out of sight. At other times a flock of these birds, amounting to fifteen or twenty individuals, is seen hovering around the trees. They dive in rapid succession amongst the branches, glancing along the trunks, and seizing in their course the insects and small lizards of which they are in quest. Their motions are astonishingly rapid, and the deep curves which they describe, their sudden doublings and crossings, and the extreme ease with which they seem to cleave the air, excite the admiration of him who views them while thus employed in searching for food."

THE SWALLOW-TAILED KITE
(*Nauclerus furcatus*).

Their food, we are told, consists principally, indeed, almost exclusively, of insects. Audubon, however, states that they will also devour lizards and snakes. When in pursuit of insects they hunt after the manner of Swallows, only with this difference, that, unlike those birds, they seize the prey with the foot. As yet all efforts to keep this beautiful species for any length of time in a cage have proved unavailing, owing to the difficulty of providing suitable food.

The CHELIDOPTERI represent a group of African Kites, that resemble the above-described species as regards their general appearance, but are readily distinguishable by the different construction of their feet and wings.

THE DWARF SWALLOW-TAILED KITE.

The **Dwarf Swallow-tailed Kite** (*Chelidopterix Riocouri*) is of a greyish blue colour upon the upper part of the body, deeper in shade upon the head and shoulders than on the wings and tail. The tips of the tail-feathers of the second order are white, the brow, bridles, cheeks, and under portions of the body pure white; the lower wing-covers and beak are black, and the feet yellow. In length this species measures from thirteen to fourteen inches, of which seven belong to the tail; the wing is about nine inches long. Nothing is known of this rare bird, except that it is an inhabitant of the extensive steppes of Central Africa, and appears regularly in Kordovan. We ourselves have never seen it, except when soaring high in the air, only occasionally coming low enough to be recognised by the naked eye.

The FIELD KITES, or HARRIERS (*Circi*), are birds of moderate size, characterised by their elongated bodies, long, slender wings, broad but not large tails, long, weak, short-toed feet, and small, but very decidedly-curved beaks, hooked at the extremity, and furnished with blunt denticulations. In some species the feathers on the face are prolonged into a disc, and in all, the third and fourth quills of the wings exceed the rest in length. The plumage is soft and very lax in the region of the neck. The various members of this group belong rather to the earth than to the air, in which they seldom rise to any considerable elevation: their days are passed in hovering over the surface of fields, meadows, and pools, in search of birds, small quadrupeds, toads, and fish: they, however, only capture such prey as either swims or runs on the ground, and never molest birds upon the wing.

This family has been divided into two groups, known respectively as MEADOW KITES (*Strigiceps*) and MARSH KITES (*Circus*).

The MEADOW KITES (*Strigiceps*) are recognisable by the clearly-defined disc upon the face, and by the great variety observable in their plumage at different ages, or according to the sex.

THE BLUE KITE, OR HEN HARRIER.

The **Blue Kite, or Hen Harrier** (*Strigiceps cyaneus*), is about seventeen inches long, of which eight and a half belong to the tail; its breadth is forty inches, and the length of the wing fourteen inches. The plumage of the adult male is light greyish blue above, and white beneath; the nape is striped with brown and white; the first quill is blackish grey, the five next are black, and only grey or white towards the root, the rest are entirely grey. The tail is ornamented with a few dark spots. The plumage of the female is yellowish brown, with white lines over the eyes, and reddish yellow borders to the feathers on the hinder part of the head; the under part of the body is of the latter colour, streaked longitudinally with brown. The pupil of the eye, cere, and feet, are lemon yellow, and the beak greyish black. The young resemble the mother.

THE KITE OF THE STEPPES, OR PALLID HARRIER.

The **Kite of the Steppes, or Pallid Harrier** (*Strigiceps pallidus*), is about sixteen inches and a half long and thirty-eight and a half broad; its tail measures eight and a quarter and wing thirteen inches. In the general coloration of its plumage this bird differs but little from the species last described, though it is somewhat paler in tint, being of a leaden colour above and pure white upon the lower portions of its body; the tail and wings are distinctly striped with grey, and the wings tipped with black. The adult female is brown; the individual feathers of the mantle edged with a light reddish shade; the under side is pale reddish yellow, streaked with a darker tint. The young are recognised by the uniform colour of their lower parts. As a distinguishing mark between the Blue Kite and this bird we will add that in the former the fourth quill, and in the latter the third, is longer than the rest.

THE MEADOW KITE, OR ASH-COLOURED HARRIER.

The MEADOW KITE, or ASH-COLOURED HARRIER (*Strigiceps cineraceus*), must be regarded as representing a distinct group (*Glaucopterix*). This species is seventeen inches long and forty-two inches broad; the wing measures about fourteen inches, and the tail eight and a half. Its wings are very long, and the facial discs but slightly developed. The head, mantle, throat, and upper part of the breast are in the adult male greyish blue; the feathers upon the belly and legs are white, with reddish shafts. The primary quills are quite black, and the secondaries light greyish blue, marked with irregular black streaks, which form a well-defined border on the outer wing. The tail is ornamented with four or five dark stripes. The adult female and young male are brownish grey, the top of the head being red, striped with black. The lower portions of the body are white, marked indistinctly with reddish spots. The very young birds are of a spotless rust-red beneath, and above are covered with dark brown feathers, these latter being tipped with a reddish shade; the eye is almost surrounded by a large dark brown patch, under which is a white spot; the rump is white, the wing and tail feathers marked with irregular dark spots. The eye of the adult male is bright yellow.

The BLUE KITE, or HEN HARRIER, the first of the three species above described, is found throughout the greatest part of Europe and the whole of Central Asia; it seldom, however, wanders very far south, appearing but rarely in India, and being, we believe, unknown in Africa, where it is replaced by

The PALLID HARRIER (*Strigiceps pallidus*), which is met with in large numbers from Egypt to the western coast of Africa, but seldom makes its appearance in Southern Europe.

The ASH-COLOURED HARRIER (*Strigiceps cineraceus*), on the contrary, belongs to the South-eastern countries of the European continent, and the greater part of Asia; it is also common in America. All these three species so closely resemble each other in their habits and mode of life, that we shall confine ourselves to a description of the Blue Kite, merely adding that the names Kite of the Steppes and Meadow Kite, given to the other two, indicate the districts they principally frequent. All are active, bold, and cunning: their flight, which is quiet and uncertain, often consists of a mere hovering in the air; at such times the tips of the pinions are held above the body, and the tail is slightly spread. This peculiarly irregular mode of progression renders it impossible to mistake these Kites for any of their congeners if seen when upon the wing; they usually fly very near the ground, and but rarely soar to any considerable height. According to Naumann they avoid lofty trees, and prefer to perch upon stones or hillocks, sleeping at night amongst grass, reeds, or corn. Our own observations have proved that this peculiarity does not apply to the Pallid species, which both sleeps and perches during the day among the branches of trees, never, however, selecting such as are at the summit, but seeking a resting-place as near the trunk as possible, much after the manner of the Owls. When upon the ground, these Kites run and hop with so much adroitness and activity as frequently to succeed in capturing a mouse, whilst the latter is endeavouring to save its life by speed. The early part of the day is spent in procuring food; at noon they rest, and then resume their labours until the shades of evening have fully closed in: owing to the extreme keenness of their sight and hearing, they are capable of hunting almost in the dark, and can often detect their prey by the sense of hearing alone. In disposition they are so inquisitive that almost any attractive object will bring them down to investigate it. Of their courage we cannot speak in flattering terms, but we have known them join forces with the Crows in order to attack one of the larger tyrants of the air. When caged they are easily tamed; we do not, however, recommend them for domestication. Their voices are not loud, but penetrating. All these birds are eminently useful to man, as they destroy enormous numbers of mice as well as frogs and other reptiles; but they also most unmercifully devour eggs and young birds during the breeding season. We have never seen them touch carrion. The period of incubation commences with the spring. The nest is placed among growing grass or reeds, the parents prudently waiting until it is safely concealed before the eggs are deposited. Naumann describes the eyrie as being a mass of dry twigs, grass, potato stalks, and similar materials, lined with hair, feathers, or moss. Occasionally the nest is merely formed of a little straw or grass, rudely matted together. The brood consists of four or five eggs, round in shape, and having delicate shells; these are of a greenish white colour, sometimes marked with very tiny spots and streaks, but are entirely without lustre. The young are reared upon mice, small birds, frogs, and insects.

THE REED KITE OR MARSH HARRIER (*Circus rufus*).

THE REED KITE, OR MARSH HARRIER.

The Reed Kite, or Marsh Harrier (*Circus rufus*), closely resembles the birds above described in its general construction, but its beak is longer and more powerful, and its tarsi more robust; the facial disc, moreover, is only slightly indicated. Its length is twenty-one inches, of which ten belong to the tail; its breadth varies from forty to fifty inches. The female is from one and a half to two inches longer, and three broader than her mate. The plumage of the adult male is often much variegated. The top of the head and brow are brown; the cheeks and throat are covered with pale yellow feathers, having dark shafts; the upper part of the breast is yellow, streaked with brown, and the feathers on the under part of the body are rust colour, tipped with a light shade; most of the secondary quills, and all the tail-feathers, are grey. In the female the top of the head and nape are yellow, striped with brown, the rest of the mantle is reddish brown; the shoulder and upper wing-covers of the axillary region are yellow, streaked with brown; the throat is yellow, the cheeks and fore part of the body reddish brown. The young are usually dark brown, with yellow heads, but vary much in their plumage. The feet of all are pale yellow; the beak is black; the eye of the adult bird yellow; that of the young, nut brown. It is at present uncertain to what countries the habitat of this species is restricted, as it has been occasionally met with in many parts of the world. Marshy districts afford its favourite retreats, and it is constantly seen in the vicinity of water or bog land, carefully avoiding high, dry plains, or mountainous regions. During the winter this Harrier is one of the commonest birds of India and Egypt. It reaches Europe about March, and at once takes possession of its appropriate haunts. In its mode of life and habits it so closely resembles the Blue Kite that further description would be mere repetition. Its food consists principally of water and marsh birds, frogs, fish, and insects; according to Jerdon, it will also eat shrew mice and water rats. Large eggs it opens with great dexterity, small ones are devoured whole; with Swan's eggs it appears to be unable to grapple, for Naumann mentions having seen a Reed Kite turning them over, and vainly endeavouring to get at the interior: it is no doubt from fear of this voracious enemy that many birds are at such pains to conceal their nests. From the breeding season until autumn this species pursues all kinds of Water Fowl with insatiable avidity; it is in vain that the quarry endeavours to elude pursuit by diving; old Ducks alone seem capable of chasing away the unwelcome intruder, who, however, revenges itself for their temerity, by destroying all the unprotected ducklings that stray into its vicinity. In India this bird often exhibits great hardihood; indeed, it is not uncommon for it to seize upon a Snipe at the very moment that the sportsman is about to fire. The eyrie is formed in beds of reeds, and is a mere rude mass of flags, rushes, or similar materials carelessly heaped together. The brood consists of from four to six large greenish-white eggs, which are hatched by the female alone, who is meanwhile entertained by the antics of her mate; the latter amusing himself by performing every conceivable kind of vagary in the air, accompanying his motions by alternately lively and lugubrious cries for whole hours at a time. The young are tended with much care by both parents. As may be imagined, the enemies of the Reed Kite are neither few nor backward in their attacks; the flocks of Crows alone must occasionally make its life wearisome, for they allow no opportunity of annoying or pursuing it to escape their vigilance. In some parts of Asia the Reed Kite is trained to hunt Ducks; but in Europe, as far as we are aware, this has never been attempted.

Several species of Kites inhabiting New Holland, are distinguished from those already described by their plumage. These birds have been grouped together under the name of SPOTTED KITES (*Spilocircus*).

JARDINE'S SPOTTED KITE.

JARDINE'S SPOTTED KITE (*Spilocircus Jardinii*) is about the size of the Reed Kite. The feathers upon its cheeks, ear-covers, and the top of its head are nut brown, streaked with blackish brown upon the shafts; the face, breast, and back are dark grey; the under side of the wings, belly, and legs are reddish brown; most of the feathers upon the wings and lower part of the breast are marked with round white spots upon each side of the shaft; the quills are dark, and the tail-feathers striped alternately with brown and grey. The beak is grey at the base, and black at its tip; the feet are yellow, and the eyes orange. The young birds are of an uniform dark brown upon the back, and striped instead of spotted on the lower parts of the body. Gould informs us that the Spotted Kite is found extensively throughout New South Wales, and that it closely resembles its European congeners in its habits and mode of life. Small quadrupeds, birds, lizards, and snakes constitute its principal nourishment. The nest is built upon the ground.

The BUZZARDS (*Buteones*) constitute a group of somewhat heavily-constructed birds, of moderate size, that are found extensively in both hemispheres, and in almost every latitude. Their bodies are stout, their heads broad, thick, and flat; they all have short beaks, which curve downwards from the base, are comparatively thick at the sides, and without denticulations on the margin. Their necks are short, and their wings long and rounded; in the latter the fourth quill usually exceeds the rest in length. The tail is of moderate size, the tarsi of no great height, and furnished with short, weak toes, which are, however, armed with sharp and formidable talons. The plumage is more or less lax, and composed of long, broad feathers, except upon the head, where they are narrow and pointed, being only exceptionally prolonged into a crest. Dusky hues predominate in the coloration of these birds, and their markings are numerous and very varied.

The Buzzards frequent both mountainous and level districts, preferring, however, such situations as abound in fields and woodlands. During the breeding season each pair takes up its abode in a certain limited district, within which it keeps, never trenching upon the space belonging to a neighbouring couple. Towards other members of the feathered creation they are inoffensive and peaceable, and are only roused to violence should an intruder venture too close to their young family; such as inhabit the northern countries of Europe are migratory in their habits, while those found in southern regions are stationary. All the various species fly slowly, more after the manner of the Eagles than of the Kites; when about to pounce upon their prey, they hover, Falcon-like, for a moment in the air, and then come slowly and heavily down. Upon the ground their movements are ungainly, and their step an awkward attempt at a hop. So strong and keen is the sight of these birds, that they may be very properly termed "eagle-eyed;" their hearing is also good, and their powers of touch and taste well developed.

In spite of the apparent dullness exhibited by the Buzzards, they are superior in intelligence to most of their order, and scarcely deserve to be called rapacious, as when no longer hungry they rarely plunder from mere love of theft; having satisfied their appetite, they seem to trouble themselves no longer about the chase. With other Birds of Prey they would willingly live upon amicable terms; towards the Screech Owl alone they exhibit a most implacable hatred. But the Buzzards themselves have many tormentors, no doubt from the fact that such of their assailants as are light and active find considerable amusement in following and worrying their more ponderous and unwieldy neighbours. Worms, snails, larvæ, and various kinds of insects, together with some kinds of vegetable food, are eaten in large quantities by these birds, so that their services to the farmer are both extensive and important. Rice they will readily devour, and snakes they perseveringly destroy, even if the encounter necessitates considerable exertion. Their eyrie is built in high trees, and constructed in the most careless manner; the eggs are usually three or four in number, though occasionally the female lays but one. The young remain for a considerable time under the care and tuition of their parents, by whom they are most watchfully tended. If taken from the nest when very young, the Buzzard will become so tame that it may be allowed to fly about at large.

The SNAKE BUZZARDS (*Circaëti*) have frequently been numbered with the Eagles under the name of Snake Eagles. These are large birds, of a most peculiar type. Their bodies are slender, but powerful, with short neck, large head, and strong beak; the latter curves downwards from the base, is compressed at its sides, and terminates in a long hook. The wings are broad and long, the third or fourth quill exceeding the rest in length; the tail is of moderate size, broad and straight at its extremity; the feet are high, and protected by a thick armature of horny plates; the toes are very short, and furnished with short, sharp, crooked talons. The plumage is lax; and, as in that of the Eagle, the feathers upon the head and nape are pointed at their tip.

THE SNAKE BUZZARD (*Circaëtus brachydactylus*, or *Circaëtus Gallicus*).

THE SNAKE BUZZARD.

The SNAKE BUZZARD (*Circaëtus brachydactylus*, or *Circaëtus Gallicus*) is from twenty-six to twenty-eight inches long, and from sixty-six to sixty-eight across the wings; the latter measure eighteen, and the tail nine inches. The upper part of the body of this bird is brown, the feathers upon the head and nape pale brown, tipped with a still lighter shade; the quills are blackish brown, edged with two borders, one being white, the other pale brown, and marked with an irregular black line; the tail is brown, broadly tipped with white, and adorned with three black stripes; the brow, throat, and cheeks are whitish, and streaked with delicate brown lines; the crop and upper part of the breast are bright light brown; the rest of the under part of the body is white, with a few brown spots. The large eyes are surmounted with a ring of wool-like down, and the cheek-stripes are covered with bristles; the eye is yellow, the beak blueish black, and the cere and feet light blue. The young differ but slightly from the adult birds.

Until the beginning of the present century this Buzzard was almost entirely unknown, but it is now met with throughout all the countries of Southern Europe. Its habitat, however, extends beyond that continent; indeed, it often wanders far into Northern Africa, and Jerdon mentions it as common in India. In Central Europe it is a summer bird, appearing about May, and departing early in the autumn; its disposition is extremely quiet and indolent, and as it usually prefers to seek shelter in the recesses of forests, is not very frequently seen; in Hindostan, on the contrary (where it breeds), it inhabits the more open country, whether the latter be dry or marshy. In Northern Africa it flies about during the winter in parties of from six to twelve, often settling on such rocks as are near rivers, but more generally upon the open and barren steppes; it has also been known to breed in North-western Africa. The Snake Buzzards, according to our own experience, although quiet and idle, are exceedingly quarrelsome while occupied with the care of their young; at other times they are remarkably timid, and often utter loud cries if disturbed. Those we saw in Africa would remain perched when we approached, and glower at us with their large eyes in a most unearthly manner, without attempting to save themselves by flight. It is only early in the morning and late in the evening that they are seen upon trees, the entire day being spent in searching after prey. While thus employed nothing can exceed the deliberation with which they move; indeed, it would be difficult to find in any other members of the feathered race such a picture of indolence as they present, while they sit motionless at the edge of the water, or flap their way ponderously through the air. Towards its own kind this bird exhibits many most unamiable qualities, for so greedy and envious is it, that should one of its brethren prove fortunate in the chase, a hard-fought battle is sure to ensue, in order to compel the possessor of the coveted morsel ignominiously to resign its prize, and during such encounters the combatants often use their claws with so much effect that, powerless to fly, both fall together to the ground. About noon the Snake Buzzard appears upon the river banks, over which it hops much after the fashion of the Raven. An isolated tree is usually selected for a sleeping-place, as from such a situation the bird can command a view of the surrounding country.

The food of this species consists principally of reptiles, though it also devours large quantities of fish, which, should the water be shallow, it readily obtains; according to Jerdon, it also consumes rats, small birds, crabs, and the larger kinds of insects. The manner in which this bird gives battle to serpents has been thus described: "A young individual in my possession," says Mecklenburg, "would dart down upon any snake, however large or fierce, and after seizing it with its claws behind the head, bite it vigorously several times through the nape; the reptile, thus paralysed, was then swallowed by degrees, commencing with the head, each new mouthful being prepared by a preliminary bite through the backbone. During one forenoon I have seen my bird kill and devour no fewer than three large snakes, one of which measured nearly three feet, and was very thick. I have never known an instance in which it tore its prey to pieces before swallowing it. The scales were usually cast up again undigested." Elliot mentions having seen one of these Buzzards completely enveloped in the folds of a huge poisonous snake, the head of which, however, was held so firmly in the bird's beak, that all its efforts to free itself were fruitless. The thick coat of feathers in which this species is enveloped is its only protection against the deadly fangs of its victims; recent experiments have proved that its system is not, as was once supposed, proof against their poison.

The eyrie of the Snake Buzzard is built about June; it is flat in shape, and formed of branches and twigs; the interior is lined with green leaves, and green branches are also fastened outside to protect the little family from the rays of the sun. It is not uncommon for a pair of these birds to return year after year to the same eyrie. They lay one or two eggs of an oval shape, with very thin, coarse shells, of a blueish white colour. Both parents participate in the labour of incubation, sitting alternately upon the eggs for about twenty-eight days. We are told, on reliable authority, that, if molested, the mother bird removes her young to another place. The Snake Buzzard is easily tamed if taken early from the nest.

The CRESTED BUZZARDS (*Spilornis*) are a group of very remarkable birds, inhabiting the most southern countries of Asia and Africa. Such species as we are acquainted with are of considerable size, and powerfully built; their pointed wings, in which the fourth quill is the longest, extend to the middle of the tail; the latter is of moderate length, and rounded at the extremity; the tarsus is high, and the talons short and sharp; the beak, which is straight at the base, curves abruptly towards its tip; the margin of the upper mandible is without teeth, whilst that of the lower one is excised near the extremity. The plumage is thick, and prolonged into a crest at the back of the head.

THE BACHA.

The BACHA (*Spilornis Bacha*), the species we select as an example of this group, is described by Le Vaillant as from twenty-two to twenty-four inches long, of which ten belong to the tail. The plumage is a dusky greyish brown, darkest upon the upper parts of the body; all the feathers upon the borders of the wings, lower portion of the breast, belly, and legs are marked with three or four round, white spots, standing out, by contrast, very distinctly from the dark body; the wings are blackish brown, and the feathers upon their covers bordered with greyish white; the crest is white, tipped with black, as are also the feathers on the brow. The eye is brownish red, the cere and feet yellow, and the beak greyish blue.

The Bacha is found throughout the interior of Southern Africa, Java, Nepaul, and China. According to Le Vaillant, it frequents the most barren and mountainous districts of the countries it inhabits, subsisting upon a variety of small quadrupeds, reptiles, and insects. It passes a solitary life, after the manner of our Buzzard, and is but rarely met with. The voice of this species is very melancholy. The breeding season commences in December; the eyrie, which is most carelessly constructed, is placed in holes of rocks, and usually contains from two to three eggs. Bernstein tells us that such of these birds as inhabit Java live upon the outskirts of the woods, or amongst the groups of trees growing near the villages. In such localities the nest is also built, a thickly-foliaged tree being usually selected for the purpose. The same author describes the eggs as being of a dull white, marked with irregular streaks and spots of reddish brown, which usually lie thickest towards the two ends.

Other species of Crested Buzzards are met with in the Philippine Islands, Ceylon, and India.

THE HONEY BUZZARD.

The HONEY BUZZARD, or WASP KITE (*Pernis apivorus*) may be regarded as forming the connecting link between the Buzzards and True Kites. In this bird the body, wings, tail, and beak are long, the latter, moreover, is shallow, weak, and but slightly curved towards its tip; the third quill of the wings exceeds the others in length, and the cheek-stripes are covered with short, stiff feathers; the plumage of this species is also harsher, and lies closer than that of the Buzzards above described. Its length is from twenty-three to twenty-four inches, its breadth fifty-two to fifty-four inches; the wing measures fifteen, and the tail nine inches. The plumage varies very considerably, both in its colour and markings, and it is, therefore, difficult to make any decided statements on these points. The male is sometimes of an uniform brown, the tail alone being adorned with three large and several small stripes; the head is greyish blue; sometimes, however, we find the upper parts of the body brown, and the lower spotted more or less with white; or the feathers on these portions white, with brown spots and streaks upon the shafts. The young are usually brown or yellowish brown, the feathers having dark shafts, except those on the nape, which are light. The eye is either golden, or of a silvery whiteness; the beak is black, the cere bright yellow, and the feet lemon colour.

The Honey Buzzard inhabits all the southern and central countries of Southern Europe, and during the course of its migrations frequently journeys as far as Western Africa. In disposition it is cowardly, dull, and indolent; its movements have been described in such contradictory terms, that we can scarcely imagine them to be applied to the same species; according, however, to our own observations, its flight is light and beautiful, it can rise to a great height, and describes an endless variety of evolutions in the air; like most of its congeners, it runs well, and often pursues its prey upon the ground. Its voice is monotonous, and its call-note sometimes prolonged for whole minutes at a time. The food of this species differs from that of any other Bird of Prey, for it lives principally upon wasp-grubs, very carefully avoiding such as are full-grown, and, therefore, protected by their sting. It also devours beetles, grasshoppers, caterpillars, frogs, mice, and rats; and will frequently linger near a Hawk until the latter has finished its meal, in the hope of securing what is left. During the summer it occasionally eats various kinds of berries.

The eyrie is usually placed at no great height, upon the branches of some sturdy beech or oak; pines and fir-trees being but rarely resorted to. The nest, which the bird is at no pains to conceal, is carelessly constructed of dry twigs, so lightly thrown together that the brood is often visible through its walls. The eggs, from two to four in number, are sometimes round, sometimes oval; the shell is more or less smooth, and either yellowish red or brownish white, marbled with lines of different tints, which, like the colour, are so very variable that any description of them would be useless. The young are reared upon caterpillars, flies, and other insects, with which they are supplied from the crops of the parent birds; at a later period they are fed upon honeycombs, filled with bee-grubs, also upon frogs, birds, and other substantial diet.

Behrends relates the following facts to prove how tame the Honey Buzzard may become: "My bird," he says, "before it had been many weeks in the house, learnt to attach itself not only to certain individuals of the family, but to my dogs, towards one of the latter, in particular, it exhibited great affection, following it about, and perching close to it whilst it slept. This bird was allowed to run at large about the house, and never found a door standing open without calling loudly until it was shut. It answered to the name of 'Jack,' but would only come at my call when hungry, or in a particularly good humour. I have seen it spring on to a lady's lap or shoulder, and play with her hair by drawing a lock through its beak, at the same time uttering a piping kind of cry; it would also raise its wing in order to be scratched, a performance that it much enjoyed. When hungry it used to rush screaming through the house until it found my maid, upon whose dress it clambered in its energetic endeavours to have its wants attended to. If not immediately satisfied its cries became frightful, and it would assume a very pugnacious attitude, as though it would say, 'You had better be careful how you trifle with me.' Bread and milk was the diet it preferred, but it would eat meat, porridge, and potatoes; wasps it merely killed, without eating them. 'Jack' was extremely susceptible to cold, and would hide near the stove during the winter, remaining very quiet, as he knew well that his presence in our sitting-room was against rules. His general demeanour somewhat resembled that of a Crow, his movements were slow and deliberate, and it was only when alarmed or pursued that he sought safety by taking a series of short jumps. I only succeeded in keeping him for three years."

THE CRESTED HONEY BUZZARD.

The CRESTED HONEY BUZZARD (*Pernis cristatus*) is found throughout the whole of Hindostan, where it inhabits all woodland districts, from the coast to an altitude of 8,000 feet above the sea. This species, which is very closely allied to the bird above described, subsists, like its European congener, upon young bees, wasps, ants, and caterpillars; only occasionally devouring rats, reptiles, and (as we learn from the natives) young birds and eggs. The eyrie is built upon trees; the eggs are of a light colour, and thickly covered with spots.

THE ROUGH-LEGGED BUZZARD.

The ROUGH-LEGGED or WINTER BUZZARD (*Archibuteo lagopus*) is distinguished from all its congeners by having its tarsi feathered, like those of the Eagle. The beak of this species is small and narrow, very decidedly curved, and furnished with a long hook; the wings, in which the third and fourth quills exceed the rest in length, extend, when closed, to the end of the long and rounded tail. The plumage is lax, its feathers for the most part large, those upon the head and nape being small, and rounded at the tip; the brow is white, the tips of the wings are dark slate colour, the tail white, its grey tip striped with black; the breast of the male and belly of the female are spotted with blackish brown; the hose are reddish yellow or whitish grey, similarly marked. The coloration of the feathers upon the other parts of the body is a strange mixture of all these different tints. The length of this bird is from twenty-two to twenty-five inches. The female is larger than her mate. The Rough-legged Buzzard is found throughout all the northern countries of the globe, proving itself everywhere to be a very formidable enemy to the Lemming. The eyrie is built upon rocks as well as trees. This bird is sometimes met with in England, where it has been killed once or oftener in almost every county; it has, however, rarely been known to breed here, and is usually obtained in spring or autumn, when changing its latitude from north to south, or *vice versâ*.

Sir John Richardson, in his "Zoology of North America," tells us "that this species advances east of the Rocky Mountains, as high as the sixty-eighth parallel. It arrives in the fur countries in April or May, and, having reared its young, retires southward early in October. It is by no means an uncommon bird in the districts through which he travelled, but, being very shy, only one specimen was procured. A pair were seen building their nests with sticks on a lofty tree, standing on a low, moist, alluvial point of land. They sailed round the spot in a wide circle, occasionally settling on the top of a tree, but were too wary to allow an approach within gun shot." In the softness and fulness of its plumage, its feathered legs, and habits, this bird bears some resemblance to an Owl. It flies slowly, sits for a long time on the bough of a tree, watching for mice, frogs, &c., and is often seen skimming over swampy pieces of ground, and hunting for its prey by the subdued daylight which illuminates even the midnight hours in high latitudes. Wilson observes that in Pennsylvania it is in the habit of coursing over the meadows long after the sun has set. It is fitted for this nocturnal chase by the fleeciness of its feathers, which contributes to render its flight noiseless."

THE COMMON BUZZARD.

The COMMON or MOUSE BUZZARD (*Buteo vulgaris*) is distinguished by its small, narrow, hooked beak, and bare tarsi; its tail is comparatively short, and its plumage less lax than that of the above-mentioned species, which, in other respects, it closely resembles. Its length is from twenty-two to twenty-five inches, its breadth from fifty to fifty-eight inches; the tail measures about nine inches. The coloration of the plumage varies so much in different individuals as to render a general description almost impossible—indeed, no two birds are alike.

The Mouse Buzzards are met with throughout a large part of Europe and Central Asia, appearing in the southern portions of our continent during the winter, and living solitarily in the vicinity of lofty mountains during the summer months. They are rarely seen in Northern Africa, or in the lower parts of India, but are common in certain districts of the Himalayas. In some of the warm countries of Europe they remain throughout the entire year; in such as are more northern, they arrive about March or April, and leave again in September. When about to migrate, these birds congregate in parties of from twenty to a hundred, and as the flocks usually proceed in the same course when quitting us, without actually assembling in large hosts, they often fly so as to spread their numbers over a square mile of country. At such times their flight is slow, and varied by the performance of many elegant evolutions, sweeping about in circles for half-an-hour at a time; and, as they return northwards, they often linger for whole days upon spots likely to afford them a plentiful supply of food. When about to settle, they generally select such localities as are well covered with trees, and in the vicinity of fields or pasture lands, these situations being rich in such game as they prefer; they are, however, found in large forests, and sometimes ascend to a great height in mountain ranges.

THE COMMON OR MOUSE BUZZARD (*Buteo vulgaris*).

The movements of this Buzzard are characterised by a slowness and clumsiness that render it almost unmistakable, either as it soars slowly aloft, or sits, with body huddled together and ruffled plumage, upon the branch of a tree, from whence it watches with keen eyes, for the appearance of its prey. During the breeding season and early spring, however, these birds exhibit an activity for which we are quite unprepared, and soar to prodigious heights, displaying their skill in a variety of aërial manœuvres, apparently for the amusement of their mates. The voice of the Common Buzzard very closely resembles the mewing of a cat; its sight is excellent, its hearing delicate, and the other senses very well developed; its disposition is intelligent, keen, and sly. The eyrie is built, or an old one repaired, about May. This structure is placed upon a tree, and carefully formed of branches, such as are thickest being placed beneath the others; the interior is lined with very fine twigs, moss, hair, and other soft materials. The nest is about two feet in diameter. The brood consists of three or four greenish white eggs, spotted with light brown; the female alone sits, but at a later period both parents co-operate in tending the little family. This species occasionally takes possession of the nests of Crows or Ravens, instead of building on its own account.

Rats, marmots, snakes, and insects are greedily devoured by the Mouse Buzzard, yet, as its name indicates, *mice* constitute its favourite diet—indeed, so large is the number eaten by this bird, that, according to Lenz, a family of five consumes no less than 50,000 of these destructive animals in the course of a year. We will not attempt to include the next generation in this calculation, or our readers would be involved in a sum as intricate as that with which we are all familiar, respecting the nails in a horse-shoe; if, however, we take into account that the Mouse Buzzard attacks and kills all kinds of snakes, whether poisonous or not, we shall be able in some measure to estimate the very valuable services it renders to the human race. The generally-received impression that this species is proof against the venom of serpents is incorrect, as has been proved in a variety of instances.

THE RED-WINGED OR GRASSHOPPER BUZZARD.

The Red-winged or Grasshopper Buzzard (*Poliornis rufipennis*) is a small lively bird, inhabiting Central Africa. This species is recognisable by its long, powerful, but slightly curved beak, and overhanging cere. Its pointed wings, in which the fourth quill is the longest, reach almost to the end of the long tail; the legs are high, and the toes small; the brow white, the mantle brownish grey, the head, nape, and lower portions of the body reddish yellow; the feathers upon the back have dark shafts and light borders, those on the under part of the body are marked with dark streaks; the tail is deep grey, edged with white, and darkly striped towards its tip. The quills are reddish brown, lightest in shade upon the inner web, tipped with black, and having a white border. The cere, bare cheek-stripes, and feet are bright yellow; the beak is deep orange at its base and greyish black at the tip. The length of the male is fourteen inches and a quarter; the wing measures eleven, and the tail six inches and three-quarters.

The Grasshopper Buzzard makes its appearance upon the plains of Central Africa about the rainy season, during which period it finds abundance of food, and after lingering for some time, quits that part of the continent for still warmer regions. In its habits this bird is half Falcon and half Buzzard; like the latter it perches for hours together upon the branches of a tree, surveying the surrounding country, and watching for prey; then, suddenly rising, it flies, with rapid strokes of its wings, to a considerable distance, and, after hovering for a few seconds, swoops down, and pounces upon the grasshopper it has marked for its own. We are without further particulars of the life of this bird.

THE TESA.

The Tesa (*Poliornis Tesa*), the Indian representative of the species above described, is found throughout Hindostan, where it is very numerous both upon pasture land and on open plains. The flight of this Buzzard is rapid, and much resembles that of the Kestrel. When upon the wing it usually keeps near the ground, over which it often runs for some yards, in order to secure its prey, and few prettier sights can be imagined than that presented by this bird as it thus half runs, half flies, in pursuit of the grasshoppers, upon which it mainly subsists; it will also eagerly devour rats, mice, lizards and small snakes, frogs, cray-fish, crabs, and large insects. Burgess tells us he saw a Tesa picking the remains of a full-grown Quail. The eyrie is built upon a tree; the eggs, four in number, are laid about April or May; these are sometimes quite white, or white spotted and marked with brown.

South America possesses a group of Buzzards, distinguished from the birds already described, by the formation of their beak, which is usually thin and shallow. The members of this group are also more slender, and have smaller heads and longer wings than the rest of the family; their wings, in which the fourth quill is the longest, are narrow, very pointed, and extend beyond the end of the long and broad tail; the latter is either graduated or excised at its extremity. Their legs are weak, and the tarsi bare; the toes are long, and armed with long, slender, and slightly bent talons.

THE CARACOLERO.

The **Caracolero, Snail Buzzard, or Hook-beaked Buzzard** (*Rostrhamus hamatus*), is one of the members of this group with which we are most familiar. Its length is from sixteen to seventeen inches, and its breadth from forty to forty-two inches; the wing measures from thirteen to thirteen and a half, and the tail from six to six and a half inches. The plumage is of an uniform dark grey, shaded with pale brown upon the back and shoulders; the narrow feathers that clothe the legs are edged with red, the upper tail-covers are white at the base, and bordered with white. The eye is bright blood red, the cere, cheek-stripes, corners of the mouth, half the under mandible, and the legs bright orange; the beak is black. The coloration of the young is very varied, and differs considerably from that of the parent birds.

According to D'Orbigny, the Snail Buzzards are found throughout the whole of South America, where they frequent the margins of lakes and morasses, in large numbers. In their habits they are social, keeping together in parties of about thirty birds; indeed, it is by no means uncommon to see a dozen or more perched on the same tree. When in flight they summon each other with loud cries, and all are constantly upon the watch to detect and warn their companions against approaching danger. Their flight is light, graceful, and rapid, and their attitudes, when perching upon a tree, extremely dignified. Except during the breeding season (respecting which we have no information), they sweep over the face of the country, seldom remaining for any length of time in one place. The food of this species consists of snails, reptiles, fish, and insects. Grundlach tells us that upon one occasion he saw a great number of nests built upon the trees that surrounded a large pond, and was told that they were those of the Caracolero; the young had already quitted the eyries, though it was then only April.

THE URUBITINGA.

The **Urubitinga** (*Hypomorphnus Urubitinga*) is one of the largest Buzzards with which we are acquainted. Its beak is comparatively short, high, and straight towards the base, but from thence it curves downwards in a long hook; the head is large, the wings, in which the third quill is longer than the fourth and fifth, are of moderate size; the tail is very long, and composed of broad feathers. The feet are remarkably high, the tarsi being twice the length of the middle toe; the talons are strong, pointed, and much bent. The plumage is rich in texture. The cheeks, region of the eyes, bridles, and throat are sparsely covered with a bristle-like growth; the eyelids have very well developed eyelashes. The length of this species is about twenty-two inches, and its breadth fifty-one inches; the wing measures fifteen and a half, and the tail nine inches; the female is larger than her mate. In old birds the plumage is principally brownish black; the feathers on the nape are white at their origin, and those on the back gleam with a greyish blue lustre, whilst such as clothe the inner side of the legs are marked with small light streaks. The wings are blackish brown adorned with narrow greyish blue lines; the tail-feathers are blackish brown at the root and tip, white in the middle, and surrounded by a narrow dirty white border. The eye is brownish yellow, the cere and base of the lower mandible yellow, the upper part of the beak greyish black, the feet light yellow. The young are yellow or brownish yellow; the feathers upon the hinder parts have blackish brown spots at their tips, and the wings and tail-feathers are striped with yellow and brown.

The Urubitinga is, without question, the noblest and most courageous member of its family, and, according to the Brazilians, is a very dangerous foe to monkeys, small quadrupeds, birds, lizards, and snakes; it also eagerly devours grasshoppers and snails; in order to obtain these it prefers to make its home in the forests, upon the outskirts of which it loves to linger; it is occasionally, but rarely, seen in the open country. The Prince von Wied tells us that he has often found this bird perched in the branches of some thickly-foliaged tree, surrounded by a host of feathered tormentors, who were doing their best to excite it to frenzy; these amiable endeavours, however, had no visible result; the nobler bird sat still, tranquilly pursuing its meditations, apparently quite unconscious that it was the subject of their gibes and raillery. The flight of the Urubitinga is majestic, and capable of being long sustained; its voice is very shrill, and composed of but two notes. The eyrie is usually constructed upon such inaccessible trees as grow near the banks of a river. We learn from Burmeister that the eggs, two in number, are elongated, and white, spotted with various shades of reddish brown.

The VULTURE FALCONS (*Polybori*) are a family of birds inhabiting South America. Their bodies are slender, their wings comparatively short, their tails long, broad, and rounded at the extremity; the tarsi are high and thin, the toes weak and of moderate size, the claws pointed and but slightly curved; the beak is long, straight towards its base, hooked at its tip, and straight at the margins. The plumage is harsh, and composed of large feathers; those upon the head are pointed. The cheek-stripes are *always*, the throat and brow *occasionally* bare; the eye has long lashes.

The members of this family may be regarded as holding in South America the place occupied in Europe by the Raven, Magpie, and Crow. They frequent all parts of the country in large numbers, and live in such close proximity to man, that they are literally found at his very door. Two species of this group are particularly fond of the society of the human race, and are met with throughout the land, on every spot where even the smallest settlement has been established; others frequent the sea-coast, upon which they obtain the means of subsistence; and some inhabit the woods, feeding, in a great measure, upon fruits and berries. Carrion and offal have, however, the greatest attractions for the Vulture Falcons, and wherever these are to be met with hundreds are certain to appear. The flight of these birds is so peculiar as to cause them to be recognised even at a great distance; in consequence of the equal length of the quills, the wings appear square when extended, and the tail is kept fully spread, whilst they travel through the air with a slow, sweeping kind of stroke; occasionally, however, they fly with considerable rapidity. When upon the ground their gait closely resembles that of the True Vulture. The sight and hearing of this family are keen, and their other senses tolerably acute; that of smell they certainly possess, and the nostrils are always moist. In disposition they are bold and insolent, and would willingly be extremely social; their shrill Hawk-like cry, however, renders it undesirable to cultivate their intimate acquaintance. Their nest is built upon the ground or on the branches of trees; the eggs, from two to six in number, are round, and spotted like those of Falcons. Both parents assist in the cares of incubation, and are much attached to their young. Although extremely numerous in their native land these birds are but seldom brought to Europe, and are therefore always numbered amongst the rarities of our zoological collections.

THE CHIMANGO.

The CHIMANGO (*Milvago Chimachima*) is one of the most extensively distributed species of this family. The formation of its body is slender, its head large, the wings long and pointed; in the latter the fourth quill exceeds the rest in length. The tail is of moderate size, and slightly rounded; the legs high, slender, and the tarsi sparsely feathered; the toes are long, and armed with very sharp hooked talons; the beak is slender, and terminates in a short hook; the cere is broad, and projects beyond the well-developed nostrils, which are surrounded by a kind of ridge; the throat is but slightly covered with feathers; the bridles and region of the eyes are bare. Dirty white predominates in the plumage of the adult male; the wings, tail, back, and a streak above the eyes that extends to the nape are dark brown; the four exterior quills are white in the middle, and marked with dark spots, thus forming an irregular white line; the other quills are yellowish white at their origin, and streaked with black; the upper portion being blackish brown. The tail-feathers are white, tipped and striped three times with blackish brown. The eye is greyish brown, the beak pale blueish white, brightest towards its tip; the cheek-stripes, cere, eyelids, and a small place round the eye, and the chin are orange colour; the feet are pale blue. But little difference is perceptible in the plumage of the male and female. In the young birds the top of the head and cheeks are dark brown, the sides and back of the neck yellowish white, spotted with brown; the back is dark brown, and some of the feathers are bordered with red. The wing-covers are striped with two shades of brown, the throat is dirty white, the breast blackish brown, each feather being streaked with yellow; the belly is yellowish. The length of this species is fourteen inches and a half, its breadth thirty-one inches; the wing measures about ten, and the tail six inches. The female is a trifle larger than her mate.

The Chimangos inhabit almost the whole of South America, and throughout that continent are met with in great numbers; pasture lands or large open tracts are their favourite resorts, and, if not molested, they will congregate around and upon the houses of the natives; Boeck mentions having often seen them perching in crowds on the roofs, or following the ploughman up and down the fields. They rarely frequent mountains, and then only to a limited height; but at times they are casual visitors to the sea-coast. When upon the ground the Chimango moves with dignified ease, and regards all such as approach it with a proud glance of its eye, that would lead us to imagine its intelligence superior to its position in the economy of Nature. Its flight is far from rapid, and it seldom rises high into the air. According to the Prince von Wied, these birds are never seen flying peaceably about in parties, but exhibit on all occasions such a decided love of quarrelling and strife that even a chance meeting between two of them, if strangers to each other, is likely to be followed by a furious battle. No other Birds of Prey will eat such various kinds of food as are ordinarily devoured by the Chimango, to whose voracious appetite it would seem that nothing comes amiss, even down to the merest refuse from the kitchens of the natives; it much enjoys potatoes, and not only abstracts them from the houses, but will dig them up immediately after it has seen them planted. Of all the hungry crew by which the dead body of a horse or cow is invariably surrounded, this bird is always the last to leave the well-picked bones, and may often be seen, long after the rest have deserted it, running up and down within the skeleton, in the hope of finding an as yet undiscovered morsel; it eagerly devours worms, larvæ, snails, reptiles, fishes, birds, and small quadrupeds, besides a great variety of other articles of food gleaned from the sea-coast. The voice of the Chimango is extremely harsh and shrill. The breeding season commences in September. The eyrie, which is built upon a tree, is a large shallow structure formed of branches, twigs, and roots. The brood consists of five or six very round eggs, of a reddish or light brown-grey colour, marked with irregularly disposed spots of red or brown, which lie closest at the broad end. During the period of incubation the Chimango is somewhat less quarrelsome towards its associates than at other seasons of the year, and exhibits great affection for its young.

THE VULTURE BUZZARD.

The VULTURE BUZZARD (*Milvago Australis*) is also a well-known inhabitant of South America, and is particularly numerous in the Falkland Islands. In size this species resembles the Spotted Eagle (*Aquila nævia*). The plumage of the adult birds is deep black, the feathers upon the back, neck, and breast being streaked with white; the hose are bright reddish brown; the origin of the quills and tips of the tail feathers white. The beak is grey, the cere and feet of a yellow shade. The young are without the light streaks upon the neck and breast, the feathers on these parts being speckled with red or reddish white. The quills are rust red at the base, the tail blackish brown, the beak deep brown, and the feet brownish yellow. Abbott tells us that these birds will fall upon and devour such of their own species as have been wounded; and that they are so covetous and inquisitive that he has known them drag a large hat and two balls to the distance of a mile from the spot on which they were first discovered. According to another authority, they are so violent in their disposition that it is not uncommon for them to root up the grass when they are in a particularly troublesome humour. Upon the ground they run with all the agility of a pheasant, and are then very elegant in their appearance; when perched we cannot pay them the same compliment, as their crop is often so enormously distended as to excite strong feelings of disgust. The Vulture Buzzard spends but little of its time in the air, through which it may be said to walk rather than fly, so peculiar and heavy are its movements when upon the wing. It is noisy in its habits, and possesses a loud harsh voice, much resembling that of the Crow; whilst uttering its very disagreeable but varied notes, the head is repeatedly thrown backwards and forwards, after the manner of its congeners. The eyrie is built upon the precipitous rocks that abound upon the coast, and is usually formed of dry blades of tussock grass, lined with wool. The two or three eggs of which a brood consists are round, brown, and variegated with dark spots and streaks. The female lays about November, and Abbott tells us that the young do not attain their full beauty until they are two years old.

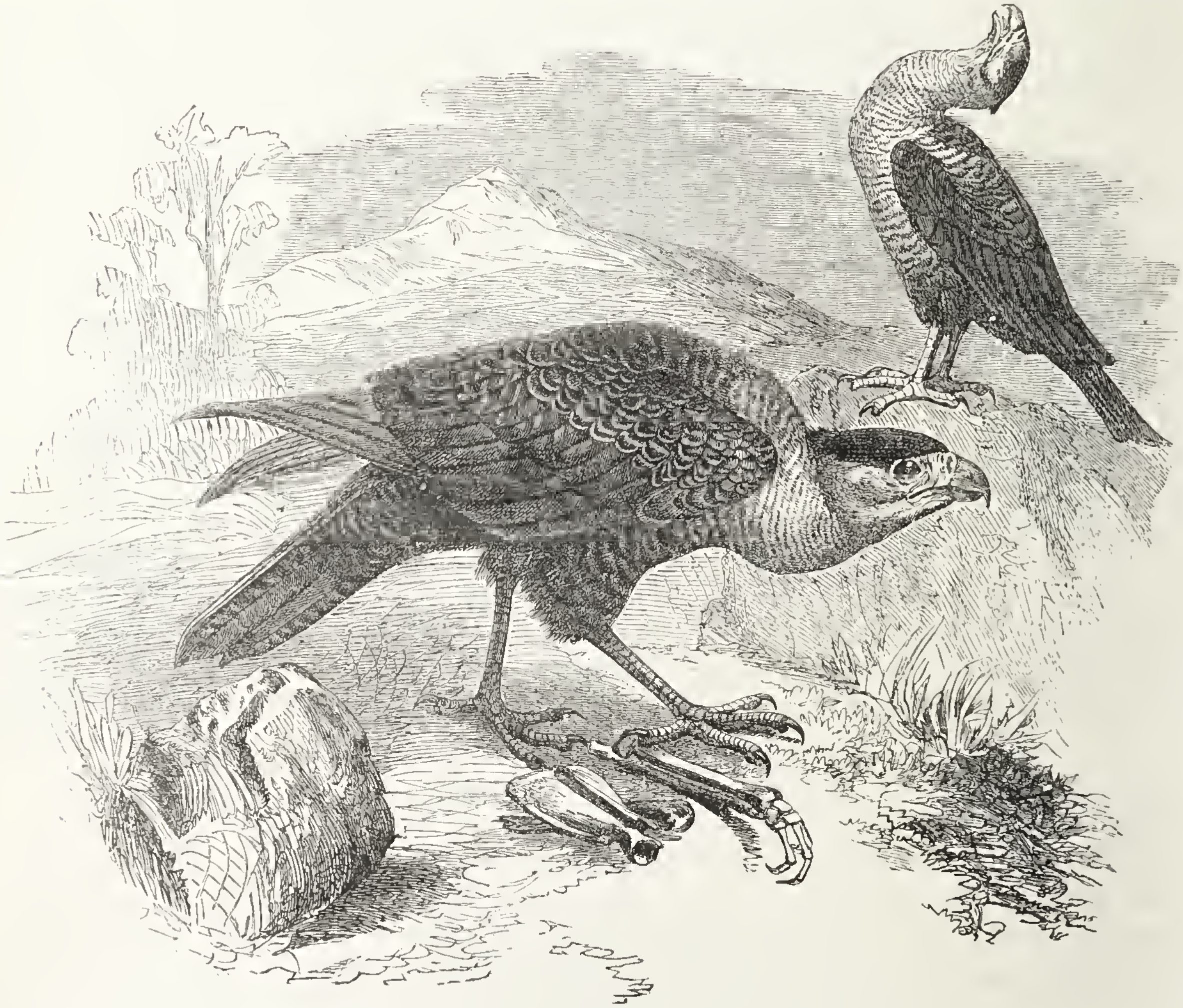
THE CARANCHO.

The CARANCHO or TRARO (*Polyborus vulgaris* or *Polyborus Brasiliensis*) is found extensively throughout South America. The group of which this bird may be regarded as the type, is characterised by a slender body and powerful wings (in which the third quill is the longest) that extend almost to the end of the tail; the feathers of the latter are ragged at the tips, as in the tail of the Vulture. The legs are long, the toes short, and the talons strong, sharp, and but slightly curved. The beak is large, high, straight at its base, and only slightly bent. The plumage is heavy and lustreless. The feathers upon the head, neck, and breast, are narrow; those on the back large and rounded. The cheek-stripes, as well as the region of the chin and crop, are so sparsely covered with short bristles that they appear to be bare. The length of the Carancho is about one foot two inches; its breadth more than four feet; the wing measures above fourteen, and the tail above seven inches; the feathers upon the top and back of the head can be raised so as to form a crest. The back is dark brown striped with white; the wings are of the same deep shade, streaked with a paler tint upon the posterior quills and wing-covers; the cheeks, chin, throat, and upper part of the breast are white or yellowish white; the sides of the throat and breast streaked like the back. The belly, legs, and rump are of an uniform blackish brown; the tail feathers are white, tipped broadly with blackish brown and thickly covered with extremely fine brown lines; the eye is grey or reddish brown; the cere, cheek-stripes, and the bare space around the eyes brownish yellow; the beak is light blue, and the foot orange colour. The female is larger than her mate, the only other difference in appearance consisting in the comparative paleness of her coloration. The feathers upon the bodies of the young birds are pointed and have light borders, those upon the top of the head being of a deep brown, but with this exception their plumage is very dull and faded in its appearance.

These remarkable birds are frequently met with in pairs, wandering over the plains of South America; but they are most numerous in the extensive regions known as the Steppes or Pampas, or near morasses. When seen upon the ground their appearance is striking and even beautiful; the crest is borne aloft, and each bird moves with an ease and bold bearing that might almost be termed majestic. Animal food of all kinds is greedily devoured by the Caranchos, and they capture mice, small birds, reptiles, snails, and insects, after the manner of Buzzards. Azara tells us that flocks of sheep if not protected by the presence of a good dog, are constantly in danger of falling victims to the attacks of these voracious marauders, who come down in parties of four or five upon the defenceless lambs, and tear out their entrails even while still alive.

The Caranchos, says Mr. Darwin, together with the voracious Chimangos, constantly attend in numbers the *estancias* and slaughter-houses. If an animal dies on the plain, the Milvago begins the feast, and then the Caranchos pick the bones quite clean. Besides devouring the carrion of large animals, these birds frequent the borders of streams and sea-beaches to pick up whatever the waters cast ashore. In Terra del Fuego and on the west coast of Patagonia they must live exclusively on such supplies. The Caranchos are said to be crafty and to steal great numbers of eggs. They attempt also, together with the Chimango, to pick the scabs from the sore backs of horses and mules; the poor animals on the one hand with ears down and back arched, and on the other the hovering bird of prey eyeing at a distance the disgusting morsel, form a picture that has been described by Captain Head with peculiar spirit and accuracy. A person will discover the necrophagous habits of the Carancho by walking out upon one of the desolate plains and there lying down to go to sleep; for when he awakes he will see on each surrounding hillock one of these birds patiently watching him with an evil eye. If a party goes out hunting with dogs and horses, it will be accompanied during the day by several of these attendants, and in the desert between the rivers Negro and Colorado, numbers constantly attend on the line of road to devour the carcases of the exhausted animals which chance to perish from fatigue and thirst.

These birds are much detested by the inhabitants of the districts where they abound, on account of their raids upon the meat laid out to dry in the fields. They will also steal fowls from under the very eye of the farmer, and destroy eggs in great numbers; we are told that they even pursue Cranes until the unfortunates are compelled to disgorge the meat they have been seen to swallow. These various attacks upon the outer world are generally returned with interest upon the head of the rapacious offender, for not only other birds, but even its own species, allow no opportunity for annoying or harassing it to escape their notice; while another troublesome class of enemies contributes to render the life of these disgusting birds far from enviable; we allude to the vermin with which their plumage is so infested as to render it unadvisable to touch even their dead carcases. The voice of the Carancho is harsh, and has given rise to its name of "Traro," as it consists of two notes—"tr-a-a-a" and "r-o-o-o," uttered in such a manner as to sound like the noise made by striking two pieces of wood together, and the attitudes into which this bird throws itself, whilst vociferating in this strange manner, are most laughable and eccentric. From early morning till sunset, the Carancho is actively employed in the pursuit of prey; at night it perches itself upon the lower branches of some ancient tree, in company with its almost inseparable companion, the Carrion Vulture; it often flies to a distance of some five or six miles in search of one of its favourite resting-places, and should an old tree not be discovered, takes possession of a piece of rock, or of one of the hills raised by the termites. Throughout the entire year the female is never deserted by her mate, and even when these birds are seen in large parties, it is easy to distinguish the respective pairs by their mutual attentions. In Paraguay the breeding season commences in the autumn; in the more central parts of the continent it takes place in the spring. The nest, which is large and flat, is placed on a tree, and formed of branches lined with roots, grass, and moss. The two eggs which form a brood are yellow, spotted with brown or crimson. The young are covered with white down when they first leave the shell, and are for a time tended with great care by their parents; this attention is, however, of short duration, the little family being sent forth early to shift for themselves. These birds are but rarely caged. Audubon informs us that all the brilliant colours that adorn the bare patches upon the body of the Carancho have completely faded within an hour after the death of the bird.



THE CARANCHO OR TRARO (*Polyborus vulgaris* or *Brasiliensis*).

THE GANGA.

The GANGA (*Ibicter Americanus* or *Ibicter nudicollis*) represents a group known as the SCREAMING BUZZARDS (*Ibicter*).

The body of this species is slender; its tail so long that the wings only reach as far as its middle portion; the tarsi are of moderate size, and equal the middle toe in length; the beak is long, narrow, and arched gently towards its tip, which is slightly hooked. The bridles, cheeks, and throat are bare, only the small portion of the cheek-stripes that passes behind the cere being covered with very long fine bristles. The length of this species is about twenty-two inches, its breadth forty-two to forty-five inches, the wing measures fifteen inches and a half, and the tail nine and a half. The plumage upon the head, throat, nape, back, wings, tail, breast, and sides of the upper part of the belly are of a resplendent black, which gleams with a green lustre; the lower part of the legs and belly are white. The eyes are bright red; the cere, corners of the mouth, and base of the lower mandible a beautiful light blue; the bare parts of the face reddish brown. The young are paler in their colours and their feathers are surrounded by a brown border; their eyes are brown.

TRACK ACROSS THE PAMPAS.

We learn from the Prince von Wied that this bird inhabits the primitive forests, or such parts of the country as are barren and unfrequented. "It was not," says this author, "until I reached the districts that lie between the rivers Ithéos and Pardo, in fifteen degrees south latitude, that

I was surprised by the loud penetrating notes of the Ganga, whose voice sounded strange and unearthly in those deserted regions. This species is of social habits, and, though often found solitary, is as frequently met with in pairs and numerous flocks. Woods are usually preferred for its dwelling-place, as in such localities it easily finds abundance of wasps, bees, and other insects, upon which it chiefly subsists. Whilst occupied in the chase of prey, its deep-toned voice is constantly heard as it flies about from branch to branch." We are told on reliable authority that it also eats large quantities of fruit and berries, and some kinds of reptiles.

THE SECRETARY.

The SECRETARY or CRANE VULTURE (*Gypogeranus serpentarius*), a member of this family, is one of the most extraordinary birds with which we are acquainted, and well deserves a minute description. Its body is slender, its wings long and straight, the first five quills being of equal length, and there are blunt spurs or excrescences on the carpal joint. The tail is of remarkable length, and very abruptly graduated, the two middle feathers, which are slender, extending far beyond the rest. Owing to the very peculiar construction of the feet, naturalists differ as to the classification of this species, and we have therefore assigned it to no particular group. The principal peculiarity of the Crane Vulture's foot is the disproportionate length of the tarsus; the toes are short and the claws of moderate size, blunt, but slightly curved and very strong. The neck is thick, and the head small, broad, and flat at the top; the beak, which is shorter than the head, is thick, powerful, and vaulted, curving abruptly downwards from its base: the hook in which the upper mandible terminates is of moderate size, and very sharply pointed. The cere extends from below the eyes almost to the middle of the beak. The plumage is thick and formed of large feathers, which are prolonged at the back of the head into a crest, composed of six pairs of feathers placed one behind the other, so that they can be either raised and spread, or laid flat one upon another. The cheek-stripes and region of the eyes are bare. In the coloration of the plumage light greyish blue predominates; the top of the head, crest, nape, quills, and tail feathers, with the exception of the two longest, are black, edged with white at their tip; the belly is striped with black and light grey, the legs with grey and light brown; the two centre tail-feathers are greyish blue, tipped with white, and spotted with black towards the extremity; the lower wing-covers are reddish brown. The crest of the female is shorter and her tail longer than that of her mate, her plumage is also lighter; her legs are striped brown and white, and her belly is entirely of the latter hue. The young resemble their mother. The length of the male is from forty-one to forty-three inches; the wing measures twenty-four inches and the tarsus is one foot long. The female is somewhat larger than her mate.

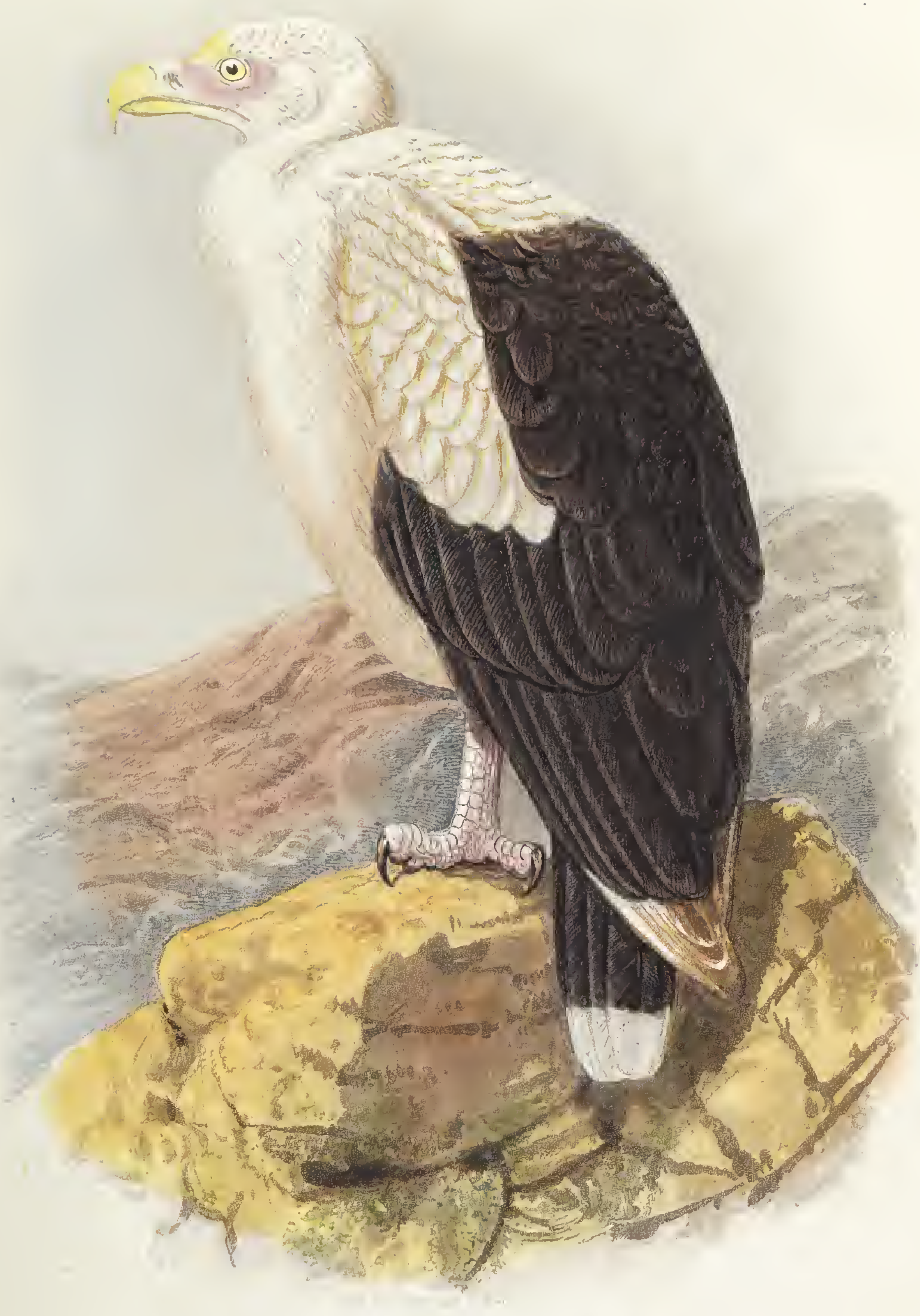
The Crane Vulture inhabits Africa, from the Cape to fifteen degrees north latitude, and from the Red Sea to Senegal; it is also occasionally seen on the Philippine Islands. Such as are met with in Northern Africa are smaller than that we have just described, and are probably a different species. A glance at the engraving of this remarkable bird will convince our reader that its life must necessarily be passed almost entirely upon the ground. Mountains and woods it carefully avoids, and when desirous of flying it is compelled to run a short distance and then spring upwards, in order to get fairly on the wing; at first it moves heavily and with apparent difficulty through the air, but after a few strenuous efforts its flight becomes easy and regular, and it sweeps lightly and beautifully aloft, apparently without even moving its broad pinions: it finds itself, however, most at home upon the ground, and stalks over its surface with much dignity, the long Crane-like legs enabling it to walk for miles without fatigue; when in pursuit of prey it runs, with its body thrown forward, almost as rapidly as a Bustard.

The Secretary Vultures live in pairs, each couple occupying a certain district, over which they often hunt for hours together, seeking their food among the grass that covers the plains. After having fully satisfied their hunger they retire to a quiet spot, and remain in a sort of dreamy apathy, until the business of digestion is accomplished. Should one of those extensive conflagrations break out by which the arid plains of Central Africa are so frequently cleared, these birds at once congregate in large numbers and hurry to the spot, in order to enjoy the rich feast thus afforded them. Keeping close to the line of fire, they seize upon and destroy the hosts of living things that are driven forth by the huge clouds of smoke, and thus spend whole hours retreating before the advancing fire, and contesting their prey with the devouring flames: so voracious are they that Le Vaillant assures us he found no fewer than twenty-one small tortoises, eleven lizards, three snakes, and a mass of grasshoppers, in the crop of a specimen he had killed; snakes of all kinds are the objects of their constant attacks, and the same author gives the following graphic account of an encounter between a Crane Vulture and one of the most deadly species of these formidable reptiles :—

"Should the snake assume a threatening attitude, and appear ready to inflict a wound, the bird spreads one of its wings, and holding it like a buckler before the foot with which it is going to transfix its prey, hops backwards and forwards in a variety of strange attitudes. Each attempt to bite is received upon the feathered shield, and when the enemy, finding all its efforts useless, becomes exhausted, it receives either a stunning blow or is cast into the air, as a preliminary to being bitten through the nape, after which it is swallowed either entire or in large pieces. It is supposed by some that the Crane Vulture is proof against the venom of snakes, as it certainly does not reject their poisonous fangs, and we have never heard of an instance in which it has been killed by a bite inflicted during one of these terrible battles." About June or July furious quarrels arise among the birds themselves relative to the choice of a mate, the disputed female becoming the prize of the most powerful of the rivals, and the pair at once commence the work of preparation for a young family. The eyrie is built upon a high tree or thick bush (generally a mimosa), and constructed of branches, plastered together with clay; the very shallow, almost flat, interior of the nest is lined with cotton-wool, feathers, and other soft materials. One of these structures is often employed for many years by the same couple, such repairs as are necessary being made at every recurring breeding season; and it is no uncommon thing for the branches of which the outer walls of the nest are formed to sprout afresh and spread, until the eyrie becomes literally a leafy bower of great beauty. Whilst repairing their dwelling, the pair pass the night in its interior, but the eggs are not laid until the month of August; these are two or three in number, and about the same size as those of a Goose, but somewhat rounder; the shell is either pure white or slightly marked with little red spots. The young are not hatched until after an incubation of about six weeks, and make their appearance covered with a coat of beautiful snow white down; at first they are perfectly helpless, and for a long time remain so weak upon their legs as to be quite unable to quit the nest, in which they sometimes remain for six months. If carefully trained, the Secretary Vulture soon becomes so tame that it may be permitted to run about a farm-yard, where it lives on the most friendly terms with the poultry, and we are told on good authority that, so far from being a troublesome member of the community, this bird not only interferes should a couple of Hens become quarrelsome and try to peck each other, but that it renders important services by clearing away intruding rats and snakes. On this account these birds are so much esteemed at the Cape of Good Hope that a severe penalty is inflicted if one of them is killed. Many and various are the names applied to this species by the natives of the different countries in which it is common; by some it is known as the "Devil's Steed," by others as the "Bird of Fate." We must own that to us these fanciful appellations are quite unintelligible, nor has any Eastern tale we have ever read thrown a light upon their origin; nevertheless our unpoetical imagination at once recognises the appropriateness of its nickname of the "Secretary," as the crest upon its head when laid back looks most comically like the pen stuck behind the ear of some scrivener's clerk.

The VULTURES (*Vulturidæ*) are the largest of all the many varieties of Birds of Prey, some of the smaller members of this family being comparable in size with the largest Eagles. The body of the Vultures is short, broad-breasted, and very powerfully framed; the neck is long, and often quite bare; the head sometimes large, sometimes small; the beak is high and straight, except at its tip, which terminates in a hook; its margins are sharp, and the upper half, or in some species one-third of the entire length is covered by a large cere; a slight outward bulging of the edge of the upper mandible is sometimes perceptible, but an actual tooth-like appendage is never met with amongst these birds. Some species possess a comb-like growth of skin above the beak. The wings are very

THE SECRETARY OR CRANE VULTURE (*Gypogeranus serpentarius*).



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large, broad, and decidedly rounded, the fourth quill exceeding the rest in length; the tail is of moderate size, and composed of fourteen stiff and rounded feathers; exceptional instances however occur, in which the second quill of the wings is the longest, and the tail formed of but twelve feathers. The legs are powerful, but the toes are weak and the talons short, blunt, and but slightly curved, making it at once evident that the feet of the Vulture are not much employed in seizing its prey. In most respects the internal structure of these birds resembles that of the Falcons; the following exceptions, however, are worthy of notice. The neck being longer they have more cervical vertebræ, and those of the tail are proportionately broader. The breast-bone is also comparatively low, and the gullet terminates in a crop of great size, which, when filled, projects like a bag from beneath the throat.

VULTURES FEASTING.

It has always been the custom to speak of the Vultures as most revolting members of the feathered tribes, whose faculties and powers are on a par with their disgusting occupation. That, in the order of Nature, to these birds has been assigned the "scavenger work" is true; nevertheless, in the perfection of the organisation by which they are adapted to the discharge of their important duties, they bear comparison with the most highly-endowed members of the order. They rival the Eagle in their powers of sight and hearing, although they are far from equalling that bird in intelligence. Their disposition is violent but cowardly, and, moreover, exhibits so much stupidity as to prevent their exercising even an ordinary amount of cunning. Indolent they are not, though they frequently linger for hours on the same spot with dishevelled plumage and drooping wings; but, this period of inanition over, they prove themselves capable of walking well upon the ground, and exhibit great command of wing and power of flight whilst skimming lightly and easily, if not rapidly, through the realms of air. All the divisions of our earth, with the exception of New Holland, afford a home to one or other of the various members of this extensive group; the greater number, however, belong to the Eastern Hemisphere. They are as often found on burning and barren plains as on the pinnacles of lofty mountains, from which they soar to a height unattainable by almost any other bird. Such species as frequent highland regions are the *most* stationary in their habits, although to none of them is that word strictly applicable, their strength of wing enabling them to sweep with ease over the whole face of the country they inhabit. Every town of Africa, Asia, and South America, is visited by a constant succession of these winged scavengers, who clear away a mass of refuse that would otherwise engender pestilence; while other species confine their attention to keeping the plains and fields clear from carcases that would taint the air with death. In India, according to Professor Behn, it is no uncommon thing to see a Vulture perched upon a corpse floating down the river Ganges, endeavouring, with outspread wings, to steer it to the neighbouring bank, there to be devoured. Occasionally, should the pangs of hunger become very keen, these birds have been known to attack sick, but still living animals; they prefer the dead carcases of quadrupeds to any other food, but will also eat reptiles or even fish, and we have seen them engaged in demolishing the remains of a crocodile. We are told that they are gregarious, and often fly together in flocks to seek for carrion, wheeling in large intersecting circles over the country, and thus obtaining a view of its whole surface; twenty birds will, in this manner, easily survey an area of as many miles. Some fly at a great height, while others keep near the ground, so that every spot is thoroughly inspected; when one of the party perceives a dead animal, it wheels round so as to announce the discovery to its nearest companions, who, followed by others from a greater distance, hasten to share the feast; all, even the most remote, steering in a straight line for the desired spot—to which it was formerly erroneously supposed they were directed by the extreme acuteness of their sense of smell. When the skin of the deceased animal is too tough to be rent asunder, the Vultures linger around it, or on the neighbouring trees, where they are joined by others of their kind, all eager to share in the banquet; from time to time they examine the carcase, testing its state with feet and claws, and as soon as it has attained the requisite degree of putridity, fall eagerly to work, the strongest driving off the weaker, who retaliate with all the rage of disappointed hunger, hissing and combating for portions already partially swallowed, and burying their nostrils in the flesh, although every minute compelled to desist in order to clear them from the moist filth which chokes them and stops their breathing. At length by continuing these vigorous attacks, the carcase is soon demolished, and nothing remains but the bare skeleton.

When satiated with the disgusting repast, they usually retire to some quiet spot, there to repose until the process of digestion is accomplished. Many hours are usually required for this purpose, after which they go down to the water to drink and take a bath, the latter being eminently necessary to creatures that generally rise from their repast covered with blood and filth of every description. After bathing they again seek repose for some hours, either lying down upon the sand, or standing with wings outstretched in such a manner as to allow the sun to warm them; but if disturbed during these *siestas*, it is not uncommon for the Vulture to disgorge its food, previous to seeking safety in flight. Trees or rocks are usually selected as resting-places for the night. Recent experiments have fully proved that the many tales told respecting the distance at which the Vulture can detect carrion are mere fables; they certainly possess the sense of smell, but by no means to the extraordinary degree formerly imagined. These birds breed in the spring time of their native lands, and build their eyries either upon rocks or on the bare ground. The eggs, one or two in number, are round, coarse-grained, and of a yellowish or grey tint, marked with spots or streaks of various patterns. In some species, if not in all, both parents assist in the work of incubation. When hatched the young are usually covered with a thick down, and are so extremely helpless that they are fed with carrion that has been more than half-digested in the crops of the parents. At a later period they exhibit a voracity almost exceeding that which distinguishes them when full grown. Many months elapse before the nestlings are capable of providing for themselves, and during all that time they are tended and instructed with great affection by both father and mother, whose united efforts are often scarcely sufficient to satisfy the cravings of their ravenous offspring.

THE BEARDED VULTURE.

To the Bearded Vulture (*Gypaëtos barbatus*) is assigned the first place upon our list, as being the noblest member of the group with which we are acquainted, bearing in some respects a resemblance to the Falcons. The body of this species is elongate, but powerful; its head is large, long, flat in front, and arching upwards towards the back; its neck is short; the wings, in which the third quill is much longer than the first, are of great size and pointed; the long tail is graduated or conical, and composed of twelve feathers; the beak is large; the upper mandible, which is saddle-shaped at its base, rises somewhat towards its tip, and terminates in an abrupt hook; its margins are not incised, and the lower mandible is straight. The feet are short, and by no means powerful; the toes of moderate length, and very weak; the talons strong, and but slightly bent and blunt. The plumage is rich, and composed of large feathers; the origin of the beak is surrounded by bristles, that grow over the cere and beneath the lower mandible, thus forming a kind of beard. The head is covered with small bristle-like feathers, whilst those upon the neck are of large size; the rest of the plumage lies compact and close, except upon the legs, the hose being also formed of large feathers, which extend as far as the toes. In old birds the upper part of the body is black or blackish brown, each of the individual quills being tipped and streaked upon the shaft with white; the under side is reddish yellow or white, spotted here and there with black; greyish brown predominates in the coloration of the young. The skeleton of this bird is remarkably massive. The back-bone contains thirteen vertebræ in the neck, eight in the back, and seven in the tail; the breast-bone is long and broad, and its keel very deep.

It remains at present undecided whether the Bearded Vultures found throughout Europe, Asia, and Africa are to be regarded as different, or merely as varieties of the same species. Of these the European is the largest, being, according to Tschudi, from four to four and a half feet long and nine and a half broad. The tail measures twenty-one inches. The female is generally larger than her mate. The different species, if such they be, vary somewhat in the coloration of their plumage. The Bearded Vulture, or Lämmergeier (Lamb Vulture), of the Swiss Alps inhabits all the lofty mountain ranges of Europe, Asia, and Africa, living usually in pairs, or alone, and but rarely appearing in parties of more than five. The flight of this truly formidable bird will bear comparison with that of many Falcons, and its powers of enduring fatigue are very considerable. Upon the ground it steps somewhat after the manner of the Raven, but with much less ease and nimbleness. Most wonderful tales have been told of the *Ossifragra* (Bone-breaker), as the Bearded Vulture was called by the ancients, from the fact that its favourite method of despatching its victims is by precipitating them from lofty cliffs, in order that the carcase may be shattered by the fall. Gesner, who wrote about the fifteenth century, assures his readers that the eyrie of a Lämmergeier, found in Germany, "was placed upon three oaks, and was constructed of branches and other materials, so widely extended that a wagon could have been sheltered under it. In this nest were three young birds, already so large as to measure three ells in the spread of their wings. Their legs were thicker than those of a lion, and their claws as the fingers of a man." We smile at such exaggerations as these; there is no doubt, however, that these birds are by far the most dangerous and rapacious of the many feathered tyrants by which mountain ranges are infested. In 1819 so numerous did they become in Saxe Gotha that, after two children had been carried off by them, a price was set upon their heads. They destroy sheep, hares, she-goats, chamois, and calves, in large numbers, and hold even man himself in so little dread that he would be foolhardy indeed who should venture to molest them during the breeding season. From Simpson we learn that marrow-bones constitute the tid-bits of these feathered monsters, and that no sooner is the flesh stripped away than they either swallow the bones entire or dash them to pieces by dropping them upon a piece of rock. They will also devour tortoises, and the writer from whom we quote suggests that it was probably a Lämmergeier that made the unfortunate mistake of endeavouring to break the hard covering of one of these

THE BEARDED VULTURE, OR LÄMMERGEIER (*Gypaëtos barbatus*).

creatures by letting it fall upon the head of the poet Æschylus, imagining that worthy ancient's bald pate to be a stone.

Such of these birds as inhabit Asia and Africa are equally formidable. Bruce relates a fact that came under his own notice, well calculated to show that those on the latter continent are by no means behind their European congeners, either in audacity or strength. The traveller and his companions, while in the mountains, were seated at their dinner with several large dishes of goat's flesh before them, when a Bearded Vulture suddenly appeared. It did not swoop rapidly from a height, but came slowly flying along the ground, sat down close to the meat, within the ring formed by the men, and deliberately put its foot into the pan in which a large piece of meat was boiling, but, as may be supposed, soon withdrew it; there were, however, two other pieces, a leg and a shoulder; into these it struck its claws and carried them off. After a short time it returned for more, but was shot by one of the men, who by this time had recovered from their astonishment at such an unwelcome and unexpected intrusion.

The breeding time of the Bearded Vulture occurs in Europe during the first months of the year, and in Asia and Africa during the spring. The nest is variously constructed, and we cannot do better than give the words in which those built in Arabia were described by our guides: "The nest of this robber and son of a robber (may Allah curse him and all his generations!) is placed where the sons of Adam can rarely penetrate, and is formed of a huge bed of goat's hair, gathered from the animals the wretch has slaughtered. The nest contains but two eggs, with a white shell, spotted all over with the blood of its prey." The brother of Dr. Brehm was the first European who succeeded in finding one of the many nests built by these birds amid the solitudes of the Pyrenees. This eyrie was about five feet in diameter at its base and its height three feet; the interior was about two feet wide and five inches deep; the sides were constructed of branches varying greatly both in length and thickness; upon these was a heap of twigs, in the middle of which the hollow of the nest was excavated; the interior was lined with a bed of various kinds of hair. The eggs of such European species as we have seen were large and almost spherical, with a coarse-grained, dirty white shell, spotted with reddish brown, dark grey, or ochreous yellow. As may be easily imagined, the capture of these huge and fierce birds is attended with much difficulty; the Swiss endeavour to lure them down during the winter by sprinkling blood upon the snow, or laying a trap baited with carrion near the spots upon which the eyries are built.

The TRUE VULTURES (*Vultures*) have stout powerful bodies, which are of unusual breadth at the breast; the wings are long, broad, and rounded, their fourth quill being of greater length than the rest; the tail is of medium size, and slightly rounded at its extremity; the individual quills are stiff and ragged, or split towards their tip; the legs are strong, of moderate length, and destitute of feathers; the toes, though long and powerful, are almost useless for grasping; the talons are slightly bent and very blunt. The beak, which is as long as the head, is higher than it is broad, and straight except at its extremity, which terminates in a moderately long and very sharp hook; the mandibles bulge slightly outwards at their margins. The plumage is composed of very long and broad feathers, and does not entirely cover the body, the head and neck are either quite bare or overspread with a slight growth of hair-like down. In some species the legs and belly are covered with down, intermingled upon the latter with long narrow feathers. The bare or thinly-covered portions of the body are often brightly coloured, but the plumage itself is usually sombre and indistinct in its coloration, though occasionally variegated. The eyes are large and expressive, the formation of the nostril differs considerably according to the species. All the members of this group see, hear, and smell with great acuteness, and their intelligence is by no means inferior to that of the Bearded Vulture.

The CONDORS, or WATTLED VULTURES (*Sarcorhamphi*), as three of the largest species of True Vultures have been called, are at once recognisable by their comparatively slender bodies, long narrow wings, and long tails. The tarsi are high and the toes large; their neck is of moderate size, and the head long; the beak, compressed at the side, terminates in a powerful hook, which, in the male, is decorated above the base of the upper mandible with a kind of fleshy comb, and, in the region of the chin, with wattles or folds of skin. The nostrils are very peculiar in their formation, not having the usual division between them. The plumage is composed of small, brightly coloured feathers, and does not cover the whole body, some parts being left entirely bare. Unlike most of their family, the males of the three known species of Condors are larger than the females.

THE CONDOR.

The CONDOR (*Sarcorhamphus gryphus*, or *Sarcorhamphus condor*) has been the subject of even more extravagant tales than its European representative, the Lämmergeier, as its name of Gryphus or Griffin indicates; indeed, the travellers of former times seem to have thought no anecdotes too absurd to impose upon the popular mind either concerning the bird itself, or other productions of the countries it inhabits. The plumage of the full-grown Condor is principally black, enlivened by a slight metallic lustre; the upper part of the wings is black, but all the quills are tipped with patches of white, which become gradually so broad that the shoulder feathers are almost entirely white, and only black at their origin. The back of the head, face, and throat are blackish grey, the neck flesh colour, and the region of the crop pale red; the fold of skin and two warty lappets on either side of the throat of the male are bright red. In both sexes the neck is surrounded by a ruff of white feathers; the eyes are fiery red, the beak horn colour, and the feet dark brown. Humboldt gives the dimensions of the Condor as follows:—The body three feet three inches, span across the wings eight feet nine inches, and the tail fourteen inches. The female, according to the same authority, is one inch shorter, and nine inches less in breadth.

All the highlands of South America, from Quito to fifteen degrees south latitude, afford a home to this huge bird, whose powers of flight are stupendous; indeed, we are told on reliable authority that it is capable of soaring to an altitude of 22,000 feet above the level of the sea, thus surpassing any other member of the feathered race in its wonderful strength of wing. In Peru and Bolivia it lives and breeds upon the sea-coast, but is by no means so numerous as in mountainous districts. Except during the period of incubation, Condors fly in large parties, spending the entire day in sailing majestically about in search of food, and pass the night perched upon one of their favourite ledges or lofty pinnacles of rock. "Near Lima," says Mr. Darwin, "I once watched several Condors for half-an-hour together. They moved in large curves, sweeping in circles, ascending and descending, without once flapping their pinions. As they glided close to my head I intently watched from an oblique position the outlines of the separate and terminal feathers of their wings. If there had been the slightest vibratory motion these would have been blended together; but they remained distinct under the blue sky. If the bird wished to descend, the wings for a moment collapsed, and then, when again expanded with an altered inclination, the momentum gained by the rapid descent seemed to urge it upward with the steady, even motion of a paper kite."

The food of these gigantic birds consists principally of carrion; but they also destroy pumas, vicunas, sheep, and even calves, and thus work terrible havoc among the flocks and herds of the sturdy mountaineers, who are compelled to train their watch-dogs for the especial duty of barking incessantly as long as one of these formidable marauders is within sight of their flocks. Modern writers all agree in corroborating the statement of the Indians that this species never molests children, and as much as possible avoids the vicinity of man, though, if actually attacked, it displays extraordinary courage, as the following extract from the journal of Sir Francis Head fully shows :—" In riding along the plain I passed a dead horse, about which were forty or fifty Condors. Many of them were gorged and unable to fly from repletion, several were standing on the ground, devouring the carcase, the rest hovering over it. I rode within twenty yards of them, and saw one of them displaying his strength as he lifted the flesh and tore out great pieces, sometimes shaking his head and pulling with his beak, and sometimes pushing with his leg. Got to Mendoza and went to bed. Wakened by one of my party who arrived. He told me that, seeing the Condors hovering in the air, he also had ridden up to the dead horse, and as one of these enormous birds flew about fifty yards off and was unable to go any further, he rode up to him, and, jumping off his horse, seized him by the neck. The contest was as extraordinary as the rencontre was unexpected. My companion said that he had never had such a battle in his life; that he had put his knee upon the bird's breast and tried with all his strength to twist his neck, but that the Condor, objecting to this, struggled violently, and, moreover, that as several others were flying over his head he expected that they would attack him. At last he succeeded in killing his antagonist, and showed me with great pride the large feathers from his wings."

The preparations made by these birds for their young are extremely slight; indeed, in most instances the two eggs laid by the female are deposited upon the bare rock. The eggs are large, the shell yellowish white, spotted with brown. When first hatched, the young are covered with a coat of grey down; they grow but slowly, and remain under the protection of their parents long after they are fully fledged. Some tribes of Indians prize the heart and other portions of the body of the Condor as invaluable specifics for many serious maladies, and more than one modern writer has testified to their efficacy in certain complaints. When caged this gigantic bird has been known to become comparatively tame, and attached to its keeper.

THE CALIFORNIAN CONDOR.

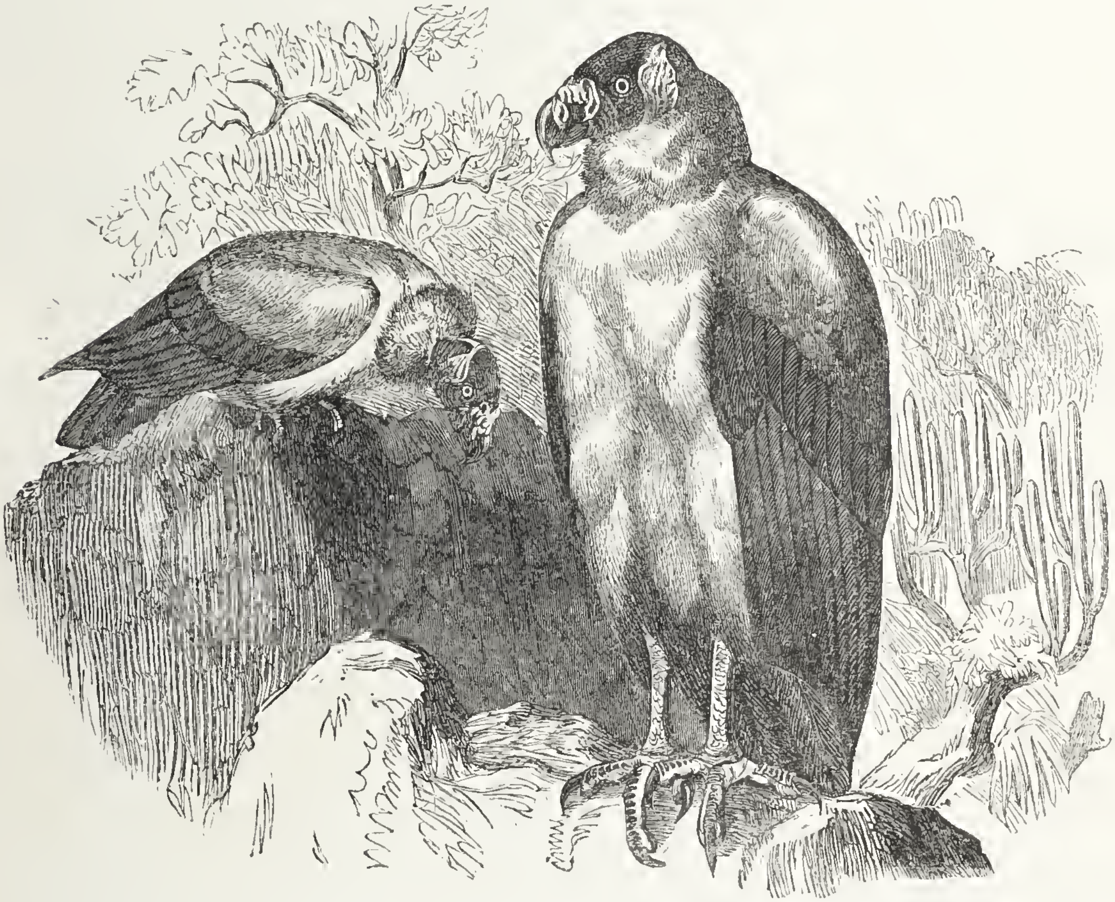
The **Californian Condor** (*Sarcorhamphus Californianus*), as the second member of this group is called, is found throughout the mountains of California. According to Taylor, this bird is four feet six inches in length (of which fifteen inches belong to the tail), and eight feet four inches across the span of the wings. Its plumage is of an uniform dark brown or black, marked upon the wings with a triangular spot; the breast is dirty white, as are the exterior feathers of the under surface of the wings; the head, with the exception of a three-cornered stripe covered with small feathers, is bright lemon yellow; the neck is of a dirty flesh colour. The habits of this species resemble those of its congeners, but it is found in larger numbers near the coast, and subsists principally upon fish.

THE KING OF THE VULTURES.

The **King of the Vultures** (*Sarcorhamphus papa*) has lately been separated from the preceding under the name of *Gyparchus*, owing to some slight variety in the shape of its nostrils. This bird, known to the writers of former days under the significant appellation, "King of the Vultures," is well worthy of the place thus assigned to it, both as regards its size and general aspect, as well as for the mastery it asserts over other members of its family. Its plumage is extremely beautiful; the fore part of the back and upper wing-covers are bright reddish white, the belly and lower covers pure white, and the wing and tail deep black; the ruff around the neck, and the outer web of the quills are grey; the top of the head and face are covered with short, stiff, flesh-coloured bristles or feathers. The region of the eye exhibits a number of remarkable warts, which, like the folds of skin that pass over the back of the head, are dark red; the cere, neck, and head are light yellow, the deep, lappet-like wattle is black, the beak yellowish white at its tip, bright red in the middle, and black at its base; the feet are blackish grey, and the eye of a silvery whiteness. The plumage of the young is of an uniform nut brown, darkest upon the back and rump; the lower part of the thighs is white. The length of this species has been variously estimated—Tschudi gives it as thirty-two, Burmeister as thirty-four inches. Its breadth is about sixty-seven inches and a half, the wing measures twenty, and the tail nine inches. The female is larger than her mate, but has a somewhat smaller wattle.

THE CONDOR (*Sarcorhamphus gryphus*, or *Sarcorhamphus condor*).

The King of the Vultures is found throughout all the lowland provinces of South America, from thirty-two degrees south latitude as far as Mexico, Teja, and Florida, where it usually frequents the primitive forests or fertile plains. It is occasionally met with upon mountains, at an altitude of 5,000 feet above the level of the sea, but is never seen in barren districts or upon bare rocks. This species mainly subsists upon carrion, and morning has scarcely dawned before it may be seen sweeping over the face of the country, in search of the carcase of some creature that has fallen a victim to the jaguar, or one of the many beasts of prey that abound in large forests. Such a repast once found, the bird does not immediately fall to and gorge itself after the manner of most Vultures, but seats itself at some distance upon the ground, or on a neighbouring tree, from whence, with head sunk between its wings, it casts longing glances at the tempting meal, and appears to be endeavouring to put a very keen edge indeed upon its appetite by this self-enforced abstinence, which often lasts for a full half-hour. This unusual proceeding is followed by an onslaught so vigorous, that the royal glutton forgets its usual vigilant precautions for its own safety, and becomes so completely gorged as to be unable to rise from the spot on which it has breakfasted. Schomburghk tells us that whatever birds may be feasting on a dead animal, the Vulture King no sooner arrives at the scene of action than the busy crowd precipitately retire, leaving it in undisturbed possession of the spoil, and only return in case a few scraps should be left after the unwelcome monarch is fully satiated. Many writers have endeavoured to prove the falsity of this statement, but it tallies exactly with our own observations. We have frequently witnessed similar scenes, in which the disappointed birds never ventured to interfere with the lord of the feast, but perched around upon the trees, devouring with their eyes what was unattainable in a more satisfactory and substantial manner. Opinions also differ considerably as to the habits of this species during the breeding season; we shall, therefore, only say that, according to Burmeister, the King of the Vultures builds upon trees, and that the eggs are white.



THE KING OF THE VULTURES (*Sarcorhamphus papa*).

The GOOSE VULTURES (*Gyps*) are recognisable by their elongated body and long, slender wings. The tail is of moderate length, and the tarsi low. The neck, which constitutes the peculiar characteristic of this group, resembles in its formation that of the *Goose*, and is covered with white downy hair or bristles. The beak is comparatively long and feeble. The plumage is composed of large feathers, and varies in its coloration, according to the age of the bird. The young are easily distinguished from their parents by the fact that the feathers which cover their bodies are long and narrow, and that their necks are enveloped in a streaming, ragged kind of frill. The members of this group are found throughout the whole of the Eastern Hemisphere.

THE TAWNY GOOSE VULTURE.

The Tawny Goose Vulture (*Gyps fulvus*), the only species inhabiting Europe, is about forty-one inches long, and ninety-nine broad; the wing measures twenty-six, and the tail eleven inches. Its plumage is almost entirely of a pale tawny colour, darker on the lower parts of the body than upon the back; the large wing-covers are surrounded by a broad white border, the tail-feathers and primary quills are black, the secondaries greyish brown, edged with reddish brown upon the outer web. The eye is light brown, the beak rust colour, and the feet light greyish brown. The plumage of the young is darker than that of the old birds, and the feathers upon their necks are long, brown, and narrow.

This species is frequently met with in the southern countries of Europe, and occasionally appears in the more central provinces of that continent; it also frequents Egypt, Nubia, Algiers, and Morocco; but although it is sometimes seen around the Himalayas, it is replaced in the lowland districts of Hindostan by the *Gyps Indicus* and *Gyps Bengalensis*, two very similar birds.

THE SPARROW-HAWK GOOSE VULTURE.

The Sparrow-hawk Goose Vulture (*Gyps Rüppellii*), the handsomest member of this group, is three feet two inches long, and seven feet six inches broad; the wing measures two feet, and the tail nine inches and a half. In the adult bird all the large feathers, except the quills and those of the tail, are dark brown, tipped with a dirty white, crescent-shaped patch, thus giving a chequered appearance to the body. The skin of the neck is greyish blue, and shades downwards at its sides into a reddish hue, these colours being distinctly visible through the few scanty feathers with which it is overspread. The eye is silver grey, the beak yellow at the base and grey at the tip, the cere black, and the feet dark grey. The frill around the neck is formed of short, hairy, white feathers. In the young birds the small feathers are dark greyish brown, with yellowish brown shafts, and the quills and tail-feathers blackish brown. The eye is pale reddish brown, the cere and beak are black, the latter tipped with blue; the feet are greenish grey; the ruff is composed of long, narrow, dark brown feathers, each with a yellowish shaft. Several years elapse before the young acquire the full plumage of the adult birds.

The Sparrow-hawk Goose Vulture inhabits Nubia, and all the central portions of Africa with which we are acquainted. The southern portion of that continent possesses another species, the *Gyps Kolbii*, but of its distinguishing features we cannot speak with certainty. All the various species of Goose Vultures usually frequent mountain ranges, and build their nests on the rocks or upon trees. They live for the most part in very large flocks, which form extensive settlements during the breeding season, and constantly associate with a variety of other birds. In many respects they are inferior to the rest of the family, but their flight is light and elegant, and they walk with such rapidity that a man must run very fast indeed in order to compete with one of them on *terra firma*. In disposition all are violent and mischievous, and so extremely quarrelsome that battles and disputes are of constant occurrence between them and other Vultures; even those of the same species do not live on much better terms, and often engage in such deadly encounters that they appear entirely regardless of danger, and will allow a man to approach close to them. We have heard, on reliable authority, of an instance in which a shepherd was compelled to employ the "argument of a thick stick" to a couple of Goose Vultures, with which he laid about him very freely before he could persuade them to relinquish their hold upon each other, and retire from the field. According to our own observations, these birds do not begin their search for carrion until the day is far advanced. When they have found a carcase, they at once commence upon the entrails, plunging their heads into the interior, and dragging out their favourite parts with great excitement and violence; Lázár tells us that they often fall upon sick and dying sheep, and kill the poor beasts in this revolting manner.

In Europe the Goose Vulture breeds about March, and places its nest, which is formed of small branches, upon a rock. Many couples often build but a few paces from each other, and it is not unusual to see the nests of the Black Stork and some species of Eagles forming part of their settlements. The brood consists but of one coarse-shelled white egg, which in size resembles that of a Goose. Both parents assist in the somewhat lengthy process of incubation, and tend their little, round, woolly ball of a nestling with great devotion and patience, for so weak is it when it first sees the light, that three months often elapse before it is able to fly. It would be almost impossible to render one of these birds really tame, but we have heard of an instance in which a Goose Vulture became so much attached to an old mastiff belonging to its master, that when the dog died its feathered companion refused to devour the body, even when very hungry, and, after pining for a few days, expired, apparently through grief at its loss. The feathers of the Goose Vulture are much esteemed in Egypt, and large sums, we are told, were formerly paid by Turkish merchants for articles of dress made with them by some tribes of Arabs.

The CRESTED VULTURES are distinguished from the above group by their strength and compactness of body, as well as by their muscular neck, large head, powerful, eagle-like beak, and broad wings. Their plumage is also thicker and softer than in the Goose Vultures; the head is covered with short, curly, wool-like down, which is prolonged at the nape into a kind of crest, the neck and part of the throat are bare, but the lower part is ornamented with a frill, formed of large, broad, dark feathers.

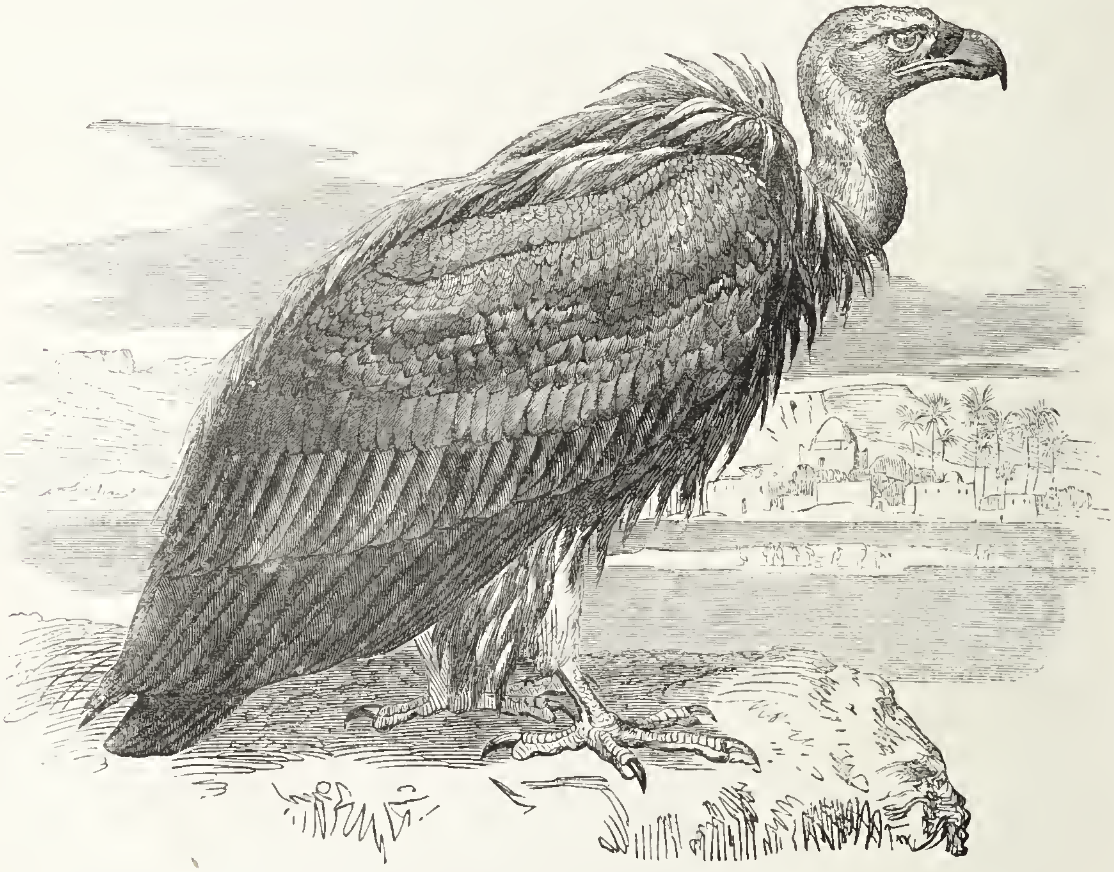
THE COWLED VULTURE.

The Cowled, or Brown Vulture (*Vultur cinereus*), as the European member of this group is called, is forty-one inches and a half long, and eighty-five broad; the wing measures twenty-nine, and the tail fifteen inches. The female is from one inch and a half longer, and from two to three inches broader than her mate. The plumage of this bird is of an uniform dark brown; the beak is marked towards the centre with red or violet, and the bare places on the throat with grey. The plumage of the young is glossier and darker than that of the adults, and the downy feathers on the top of the head are dirty whitish brown.

The Brown Vulture lives and breeds throughout all the most southern countries of Europe, and is met with in Africa in the regions around the Atlas Mountains. In Asia it is becoming extremely numerous, owing, it is supposed, to the rapid spread of disease amongst the cattle, whose carcases afford it a constant supply of food. The movements of this species are distinguished by a dignity that is very unusual amongst the Vultures. Its eye is fiery and intelligent, its bearing much like that of the Eagle, and its entire demeanour calm and almost majestic. Even when feeding, it exhibits none of the haste and violence observable in the Goose Vultures. Its principal food appears to be carrion, but it rarely touches the entrails, usually contenting itself with eating the flesh and swallowing the bones of the prey, which, we are told on good authority, it sometimes kills. Unlike those species above described, the Brown Vulture builds exclusively upon trees; its nest is large, and formed of thick boughs and small branches, the flat interior being lined with thin dry twigs. The one white coarse-shelled egg that constitutes the brood in size resembles that of the Goose. Both parents tend their offspring with great care, and feed it upon flesh for four months, as until that time it is unable to fly. Attempts to render this bird tractable in captivity usually prove fruitless, but instances have been lately known in which the Brown Vulture has been made so tame as to run about a farm-yard on excellent terms with its inhabitants, and to allow children to play with it.

THE CRESTED VULTURE.

The Variegated or Crested Vulture (*Vultur occipitalis*) is an inhabitant of Central Africa, and is now regarded as the type of a distinct group (*Lophogyps*). In this bird the entire upper part of the body, breast, and tail, are covered with black feathers, edged with brown; the region of the crop, belly, feet, and secondary quills are pure white, the primaries black. The crest is composed of white woolly down; the bare neck is bluish white, and covered in front with from eight to ten lines of small blackish warts; the eye is dark brown, the beak blackish blue at its tip, and reddish brown at its base; the lower mandible and cere are light blue; the feet pale purple, or reddish white. The plumage of the young is of an uniform dark blackish brown colour, the eye is grey, the beak red, and the foot white. This species of Crested Vulture inhabits all the woodland districts of California, where it lives either alone or in pairs, and though by no means shy, seldom ventures near towns or villages. In its general habits it closely resembles its congeners already described.



THE TAWNY GOOSE VULTURE (*Gyps fulvus*).

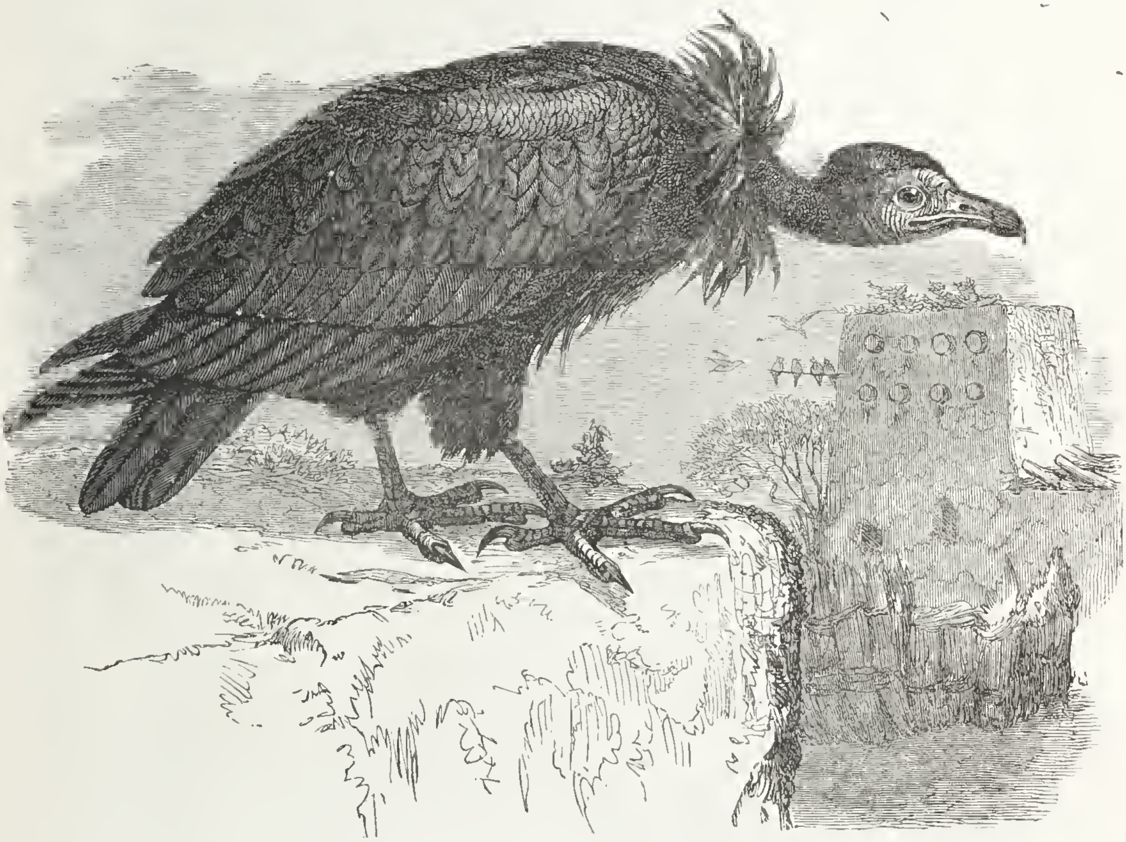
The EARED VULTURES (*Otogyps*) may be regarded as by far the most powerful members of this voracious family; they are easily recognised by their large strong head and beak, large, broad, and slightly rounded wings, comparatively short tail, long legs, and very peculiar plumage. As respects the latter, only the upper part of the body resembles that of other Vultures, the lower portion being covered with thick, long, greyish down, interspersed with a few long, narrow, sabre-shaped feathers. The legs are covered either with a similar, but longer and reddish yellow down, or with small feathers of the usual description. The head, back of the neck, and entire front of the throat are bare, and the chin is overspread with hair-like feathers. A reddish brown of various shades predominates in the coloration of the plumage; the quills and feathers of the tail have a *dark*, and those of the large wing-covers a *light* edge. Yellowish white feathers are often intermixed with those upon the back and nape. The young are distinguished by the darker hue of their plumage, and by the borders to the feathers on the lower part of the body being broader than in the parent birds. The eye is dark brown, the beak grey at its sides, deeper in shade upon the culmen and upon the lower mandible; the feet are light grey, as are the bare parts of the neck: the naked cheeks are violet. When the bird is excited these bare places become bright red.

The Eared Vultures are found throughout Africa, and have occasionally visited Europe. In Asia they are replaced by the Sukuni, or Bald Vulture (*Otogyps calvus*). In their habits they are bold and social, and everywhere frequent the vicinity of man, coming down into the villages with the utmost confidence, in order to gather up the refuse thrown from the slaughter-houses and dwellings. With such extraordinary eagerness and voracity do these birds attack their prey, that (as Jerdon witnessed) a party of Vultures devoured the body of a dead dog, and picked the bones completely clean in the course of a few minutes. The toils of the day completed, they go in search of water, and, after preening themselves, lie down to roll in the sand and bask in the sunshine; this performance over they retire to their sleeping-place in a tree, where they perch bolt upright, with head drawn in, and tail hanging loosely down, until a late hour in the following morning. So large an amount of rest do these Vultures require, that they do not commence the duties of the day until about ten o'clock, and seldom seek for food after about four or five in the afternoon; and, so soundly do they sleep, that upon one occasion we rode around the tree in which a large party was perched without arousing them. A shot fired amongst them only had the effect of causing them to rise drowsily into the air, and fly heavily to a distance of about five hundred paces, when they again settled upon some branches to finish their interrupted slumbers. The flight of these birds is very graceful, and particularly quiet and easy. When about to descend they open their wings, stretch out their feet, and reach the ground in a direct line, without the slightest movement of their broad pinions. The nests are built close to each other, upon a ledge of rock, and thus form a kind of settlement, which is for the most part quite inaccessible, owing to the precipitous nature of the locality usually selected; we have, however, made various successful attempts to reach them with the help of a Hottentot guide, but found the stench from the eyries intolerable, and the surrounding rock perilously slippery, being, as it were, polished by constant friction. The brood consists but of one white egg, which is laid about October: the nestling, when first hatched, is covered with white down, and is not fully fledged until the month of January. The Eared Vulture thrives in captivity, and can easily be rendered very tame.

The RAVEN VULTURES (*Cathartæ*), a group of much smaller birds than those above described, are recognisable by their long beaks, pointed wings, and slender tarsi; their heads are either wholly or partially bare, and in some species covered with warts. The members of this group, as their name suggests, in many respects resemble the Ravens, and may be regarded as replacing those birds throughout South America, whilst such as are found in Africa and India associate freely with Crows, and lead a very similar life. The nest is usually built upon rocks or trees, and the brood consists of one, or at most of two eggs.

The SCAVENGER OR EGYPTIAN RAVEN VULTURE (*Percnopterus stercorarius* or *Neophron Percnopterus*), by far the most celebrated bird of the above group, was called by the ancient Egyptians "Pharaoh's Hen," and was treated with a considerable amount of superstitious reverence. This bird has been in all ages a favourite subject for the pencil of Eastern artists, and even at the present day the Egyptians preserve some remnant of the respect with which this remarkable species was formerly regarded. It is distinguished from its congeners by its long, pointed wings, by its graduated tail, which is of considerable length, and by the peculiarities of its plumage. Its beak is slender, and more than half covered by the cere; the upper mandible terminates in a long but feeble hook; the foot is weak, and its middle toe almost as long as the tarsus; the talons are of moderate size and but slightly curved. The third quill of the wing exceeds the rest in length, the second is larger than the fourth, and the sixth longer than the first. The exterior tail feathers are only about two-thirds the length of those in the centre. The plumage is extremely soft, and composed of large feathers, which become much longer and broader upon the nape and upper part of the back. In colour this species varies much, according to the age of the bird, but there is no perceptible difference in this respect between the male and female. In the coloration of the adults a dirty white predominates, which shades into deep yellow on the throat and upper part of the breast, but becomes somewhat purer in its tint on the back and belly; the primary quills are black, the shoulder feathers grey, the colour of the eye varies from reddish brown to light yellow; the bare portions of the head, warts upon the throat, and upper part of beak are bright orange, the latter being tipped with greyish blue; the skin of the neck is paler than that of the head, and the wings are blueish red, or light greyish yellow. In young birds, on the contrary, the shoulders, upper wing-covers, a stripe across the middle of the breast and belly, the frill around the throat, the neck, the rump, and tail-feathers are grey; the throat, breast, belly, and quills of a blackish brown; the feathers on the top of the leg are chequered grey and black; those at the side of the neck have brown shafts and tips. The face, cere, and head are deep grey; the eye is dark brown, the beak black, and the leg light grey. The body of the female is from twenty-five to twenty-seven inches long; her breadth from sixty-one to sixty-three inches; the wing measures eighteen inches and the tail nine and a half. The Scavenger Vultures are frequently met with throughout all the southern countries of Europe, and are very numerous in Western and Southern Asia, and in all parts of Africa, with the exception perhaps of the western coast. Such of these birds as are met with in Europe, migrate to warmer regions, whilst those inhabiting Asia and Africa are stationary throughout the year.

It would be impossible to over-estimate the immense services rendered to man by the Scavenger Vultures, to whose appetite no kind of filth or refuse comes amiss. They devour carrion freely, but this forms by no means their principal subsistence; offal of all kinds they consume with avidity, and were it not that Providence had assigned to these most active birds the task of clearing away the garbage that the inhabitants of tropical and of some European cities are too indolent to remove, fever and pestilence would rage with unremitting fury. Many writers speak of these invaluable benefactors to humanity in terms of strong disgust, but for our own part we consider this by no means warrantable. Ugly they certainly are, and the odours they spread around them somewhat of the strongest; but there is such a thing as the *beauty of fitness*, and, to our minds, this is possessed by the Scavenger Vultures in an eminent degree, so exactly are they adapted to the part they have to play in the economy of Nature. So totally are these birds destitute of fear, that they not only approach, but enter the houses requiring their ministrations, and we have frequently seen them busied in clearing away the refuse strewn about the tents of the Arabs, or accompanying caravans for a whole day in the hope of obtaining the scraps thrown away by the travellers. Unlike many of its congeners, the Neophron does not usually smear itself over with filth whilst eating; it even appears to exercise a certain care in this particular, as it steps quietly about, feeding after the manner of a Barn-door Fowl. When satiated it retires to a quiet tree or rock, and there remains in a kind of indolent doze, while the work of digestion is going on, a process which often occupies several hours. When about to fly it springs from the ground with considerable force, and, after a few sharp strokes of its wings, floats slowly and gracefully through the air, without any further movement of its wings. This species is very sociable, and flies about either in pairs or small parties, which usually form a settlement during the breeding season, building their nests as near to each other as possible, upon rocks, pagodas, tombs, or similar situations. The nest is made of twigs and a variety of materials, of which rags often form a part. The brood generally consists of two long eggs of a yellowish white colour, spotted with yellowish or reddish brown; we have seen them also marbled all over with deep crimson lines. The young are covered with greyish down when first hatched, and are fed with food regurgitated from the crop of the parent birds; many months elapse before they are fully capable of providing for their own wants. If trained while young, the Scavenger Vulture is as tractable as a Barn-door Fowl, and will learn to follow its master about with the affection of a dog. According to old Gesner, the gall of this species was regarded in his time as an infallible remedy for many most dissimilar complaints.



THE MONK VULTURE (*Neophron pileatus*).

THE MONK VULTURE.

The Monk Vulture (*Neophron pileatus*) resembles the bird last mentioned in several respects, but differs from it in many particulars; the beak being comparatively short and the wings broader;

AFRICAN VULTURES (*Gyps fulvus*).

the tail projects in a straight line; the forehead and the back of the head and nape are covered with a short woolly growth of feathers; the bare portions of the face and throat are also larger than in the Scavenger Vulture; the apertures of the ears are well developed, indeed almost muscular, and the fore part of the throat is covered with wart-like excrescences. The plumage is of an uniform chocolate brown, while the soft feathers at the back of the head are grey. The beak is greyish blue, darkest at its tip; the foot pale grey, the cere light violet, the bare head and throat are blueish red. The young are recognisable by the comparative paleness of their tints, and the dark brown colour of the back of the neck, the smooth skin upon the throat, and their less conspicuous ears. The length of this species is twenty-six, its breadth sixty-six inches; the wing measures seventeen inches, and the tail nine and a half.

THE SCAVENGER, OR EGYPTIAN VULTURE (*Percnopterus stercorarius* or *Neophron Percnopterus*).

The Monk Vulture is met with throughout almost the whole of the African continent, but is especially numerous upon the banks of the Blue and White Nile and on the shores of the Red Sea. So common is it in Abyssinia and Massowah, that large parties are often seen perching about the roofs and trees, as the crows do with us, or picking up their food around the houses with the utmost confidence and fearlessness. Before the natives have left their huts in the morning, these active servants are at the door, ready to begin their task of cleansing, as soon as the family will allow them to enter and remove whatever filth may have accumulated. So extremely feeble is the beak of these birds, that they seem to be almost entirely dependent upon man for the means of subsistence; and those who have never visited tropical countries can scarcely imagine how ably and perseveringly they perform the work that has been assigned to them. The movements of the Monk Vultures are active, and their habits very social; even during the breeding season the parties do not separate, but form settlements upon such groups of suitable trees as are at some distance from the towns and villages. The nests are usually placed upon the higher branches, and do not exceed one foot in diameter; they are flat in shape, and formed of twigs very nicely woven together; the interior is so small as to be capable of containing but one nestling. The solitary egg is round, coarse-shelled, and usually of a greyish white, thickly sprinkled with yellow spots. Both parents assist in the work of incubation, the male bird relieving his mate during the mid-day hours. The young grow very slowly, and after leaving the nest, subsist, according to Heuglin, upon such food as they can pick up on the sea-shore or river banks.

THE URUBU, OR TURKEY BUZZARD.

The Urubu (*Cathartes aura*) is the first of the two species of American Vultures that we have selected from amongst the many varieties inhabiting the western continent, all of which, though differing somewhat in appearance, bear so close a resemblance to each other in their habits and mode of life that we shall content ourselves with speaking of them collectively. The Urubu or "Turkey Buzzard," as it is called in North America, is distinguished by its short thick beak, graduated tail, and low tarsi. The head and bare parts of the neck are of a flesh colour, deepest at the base of the beak, and become gradually paler towards the nape; the top of the head is violet. The skin upon the brow and nape hangs in thick folds, and that of the throat is overspread with orange-coloured warts; a few bristle-like feathers are scattered over the crown of the head and around the ears; the entire body, wings, and tail are brownish black, and gleam with a metallic lustre. The beak is pale red, and partially covered by the cere, in the upper part of which the large oval nostrils are situated; the eyes are bright red, and have a blueish grey circle around the pupil. The length of this species is about twenty-two and its breadth sixty-three inches; the wing measures nineteen inches and the tail ten and a half.

THE GALLINAZO.

The Gallinazo (*Coragyps atratus*), as the second species is called, possesses a rather longer and thinner beak, comparatively high tarsi, and a shorter tail, which is straight at its extremity. The bare head and fore part of the throat are dark grey, deepening in some parts into black; the body, wings, and tail are pale black, shaded with reddish brown. The wing-feathers are white at their origin, the eyes dark brown, the beak blackish brown, whitish at the tip. The top of the head, from the base of the upper mandible to the nape, is covered with a regular succession of folds of skin, placed one behind the other. The length of this bird is twenty-three, its breadth fifty-two inches; the wing measures fifteen, and the tail about seven inches.

Both the Urubu and Gallinazo are found in large numbers throughout the whole of the American continent, and both appear to avoid the summits of mountain ranges. The Urubu lives for the most part in the vicinity of the coast; whilst the Gallinazo, on the contrary, frequents the towns and villages, occasionally, but rarely, appearing in mountainous districts. So highly do the Americans value the services rendered by these Vultures, that in some districts it is considered a punishable offence to kill them. Wilson tells us that "the Turkey Buzzards are gregarious, peaceable, and harmless, never offering any violence to any living animal, or, like the plunderers of the Falco tribe, depriving the husbandman of his stock. Hence, though in consequence of their filthy habits they are not beloved, yet they are respected for their usefulness; and in the Southern States, where they are most needed, they, as well as the Black Vultures, are protected by a law which imposes a fine on those who wilfully deprive them of life. They generally roost in flocks, on the limbs of large trees; and they may be seen on a summer morning spreading out their wings to the rising sun, and remaining in that posture for a considerable time. Pennant conjectures that this is 'to purify their bodies, which are most offensively fetid.' But is it reasonable to suppose that *that* effluvia can be offensive to them which arises from food perfectly adapted to their nature, and which is constantly the object of their desires? Many birds, and particularly those of the granivorous kind, have a similar habit, which doubtless is attended with the same exhilarating effects as an exposure to the pure air of the morning has on the frame of one just risen from repose. These birds, unless when rising from the earth, seldom flap their wings, but sweep along in ogees, and dipping and rising lines, and move with great rapidity. They are often seen in companies, soaring at an immense height, particularly previous to a thunder-storm. Their wings are not spread horizontally, but form with the body a slight angle upwards, the tips having an upward curve. Their sense of smelling is astonishingly exquisite, and they never fail to discover carrion, even when at the distance of several miles from it. When once they have found a carcase, if not molested, they will not leave the place until the whole is devoured. At such times they eat so immoderately, that frequently they are incapable of rising, and may be caught without much difficulty; but few that are acquainted with them will have the temerity to undertake the task. A man in the State of Delaware, a few years since, observing some Turkey Buzzards regaling themselves upon the carcase of a horse

THE URUBU (*Cathartes aura*).

which was in a highly putrid state, conceived the design of making a captive of one, to take home for the amusement of his children. He cautiously approached, and springing upon the unsuspicious group, grasped a fine plump fellow in his arms, and was bearing off his prize in triumph; when, lo! the indignant Vulture disgorged such a torrent of filth in the face of our hero, that it produced all the effects of the most powerful emetic, and for ever cured him of his inclination for Turkey Buzzards."

On the continent of America, this species inhabits a vast range of territory, being common, it is said, from Nova Scotia to Terra del Fuego. How far to the northward of North California they are found, we are not informed, but it is probable that they extend their migrations to the Columbia, allured thither by the quantity of dead salmon which, at certain seasons, cover the shores of that river.

Mr. Darwin, who observed this bird in New Jersey, states "that the Turkey Buzzard is a solitary bird, or at most goes in pairs. It may at once be recognised from a long distance by its lofty, soaring, and most elegant flight. It is well known to be a true carrion feeder. On the west coast of Patagonia, among the thickly wooded islets and broken land, it lives exclusively on what the sea throws up, and on the carcases of dead seals; and wherever these animals are congregated on the rocks, there the Vultures may be seen."

The Gallinazoes are extremely active; they fly lightly, and can rise with ease to a considerable height in the air; when perched they usually draw their head down between their shoulders, and allow their plumage to hang loosely about their bodies; but when upon the ground they hold themselves erect, and walk with very much the same air as a Turkey-cock. We learn from Audubon, who made a variety of experiments on this subject (see Introductory Chapter), that these Vultures discover their food by sight alone, and are almost or entirely without the sense of smell. Many writers have maintained that they subsist altogether upon garbage and carrion, but both Audubon and Humboldt concur in the statement that they will occasionally kill their own prey. The latter describes the manner in which they seize young crocodiles, about seven or eight inches in length, either upon the land or in shallow water; and tells us that the small reptile endeavours to confront its foe by rising on its fore-feet, stretching up its head, and literally grinning defiance through its long sharp teeth. It not unfrequently happens that, while thus engaged in keeping one of its feathered enemies at bay, the spirited little creature is snapped up by an Urubu, who has come up quietly and unobserved to watch the encounter. Large numbers of eggs are also devoured by the American Vultures, who frequently build their eyries in the immediate vicinity of the nests of Wading or Swimming Birds for the express purpose of thus obtaining a constant supply of food for their young. Most naturalists are now agreed that both the Gallinazo and Urubu lay their eggs in clefts of the rock, holes in the ground, or in hollow trees, as such spots afford the best protection against the inclemency of the weather. In Texas and Mexico they usually select a hillock near marshy ground, and merely scratch a hole beneath a bush wherein to lay the two eggs of which a brood consists. Both parents sit alternately for thirty-two days, and feed each other from the crop during that period. These birds are easily tamed, and when in a state of domesticity exhibit towards their master all the fidelity of a dog.

THE OWLS.

THE OWLS (*Striginæ*) constitute the last division of the extensive order RAPTORES to which we have to call the attention of our readers. These remarkable birds possess an apparently heavy, but, in reality, slender and by no means muscular body, and a large, broad, thickly-plumaged head. Their short, very decidedly arched beak terminates in a hook, and is partially covered by a cere, which is so thickly clothed with stiff bristle-like feathers as to be entirely concealed. The large eyes, which look directly forward, are without the bony ridge projecting from the brow, usually so characteristic of the Falconidæ, and are encompassed by a circle of slender, radiating, hair-like feathers, forming a *facial disc*. The ear is highly developed, and often furnished with a kind of lid; the wings are long, broad, and wedge-shaped; the tail broad and of various lengths; the short tarsi and toes are covered with feathery plumes or hairs; the outer toe is reversible, as in the Parrot, and the claws are long and sharp. The plumage of the body is composed of long, broad feathers, and is so extremely soft and downy as to render the flight of an Owl almost noiseless; the coloration is in most species sombre, and scarcely distinguishable from the bark of the trees on which they perch; in some few, on the contrary, it is comparatively bright and varied. All the members of this division possess extraordinary power of seeing in the dark, and hear with such acuteness that they can readily detect and obtain their prey in situations where sight seems impossible. As regards intelligence they are certainly behind the rest of the order; and, though generally peaceful in their disposition, will, if excited, fall upon and devour such of their companions as are aged or sick, not sparing even their own offspring. Their flight is usually slow, and their movements upon the ground extremely clumsy, but when in the trees they hop about and spring from branch to branch with great agility, sometimes amusing themselves by ducking their heads and throwing their bodies into a great variety of ludicrous attitudes. Every quarter of the globe is inhabited by these predatory birds, some species being as much at home on the icebergs of the Polar regions as others are beneath a tropical sun; they are sometimes found upon mountains, at an altitude of 15,000 feet above the level of the sea, and, though woodland regions are their favourite resorts, frequent both populous districts and desert plains. Although generally classed collectively as "Night Birds," some few species obtain their food during the day, and confront the sunlight with the utmost ease; still, they are for the most part nocturnal, concealing themselves in holes and cavities until the hour of twilight has arrived, and, if forced into the full glare of day, sit blinking and staring in a state of helpless bewilderment most amusing to behold. All reject carrion, and only devour such food as they have themselves killed, subsisting principally upon small quadrupeds, birds, and insects; a few will even eat fish. Many species are capable of living without water for months at a time, though they drink it readily, and often bathe freely. Most of the members of this sub-order lay from two to seven round white eggs, which are deposited in holes of trees, rocks, or buildings. The young remain for a considerable time under the care of their parents, by whom they are protected with great affection and courage.

The DAY OWLS (*Surniæ*) are recognisable by their small head, slender body, long tail and wings, and compact plumage. All their senses are well developed, and in intelligence they far exceed any of their nocturnal relatives.

THE SPARROW-HAWK OWL.

The Sparrow-hawk Owl (*Surnia Ulula*, *Surnia funerea*, or *Surnia nisoria*), often called the Falcon Owl, on account of some slight resemblance to that family, is one of the best known members of this group, and is distinguished from its congeners by its broad flat head, and small face, which is without the circle of feathers around the region of the eye, possessed by most of the species; its wings are slender and pointed, its tail long and conical. The beak is short, powerful, higher than it is broad, and curves downwards from its base; the hook in which the upper mandible terminates, overlaps the lower one; the margins of both are slightly incised, and the latter has a deep notch at its tip. The tarsi are completely covered with feathers, and the toes armed with short and very sharp claws; the eyes and apertures of the ears are large. The plumage, which is rich, soft, and glossy, is much thicker than that of the majority of Night Owls; the feathers on the sides of the head are held erect, and thus make the face appear fully to equal the body in breadth. The outer web of the anterior quills is denticulated like a saw, while the inner one is of velvety softness. The cry of this species resembles that of the Kestrel; when angry it snaps with the beak, after the manner of other Owls, but, unlike most of the members of the family, its eyes are kept open in the day-time, and it rather seeks than avoids a strong light. The face of the adult male is whitish grey, and marked with two black streaks, one before and one behind the ear, forming a sort of crescent. The top of the head is brownish black, each of the feathers in that region being tipped with a round white spot, which increases in size towards the back of the neck; the nape and a spot behind the ear are pure white; the feathers upon the back are white, edged and striped with brown. The breast, sides, and belly are white, marked with blackish brown; the throat is white, traversed by a dark stripe; the quills and tail-feathers are mouse grey, and for the most part streaked with white. The beak is dingy yellow, tipped with black, and the eyes of a beautiful brimstone yellow. Considerable deviations from this coloration are of frequent occurrence, but the young closely resemble their parents. The length of this species is from fifteen to sixteen, and its breadth from twenty-nine to thirty-one inches; the wing measures nine and the tail seven inches.

The Sparrow-hawk Owls are met with extensively throughout all the countries of the extreme north, and frequently visit the central portions of the American and European continents. Birch, fir, and pine forests afford them the retreats they prefer, and where these are found they will often ascend to a considerable height in mountain ranges. Wallengen tells us that their eyries are built upon fir and pine trees, and are formed of leaves and twigs, intermixed with dry moss; and that the six or seven round white eggs that constitute a brood are laid early in the spring. Some naturalists are of opinion that they lay but two eggs. We learn from Richardson that large numbers of these birds are killed by the fur hunters, and that they subsist principally upon insects and mice; they also devour Ptarmigans, and when in pursuit of the latter are so bold that, at the sound of the sportsman's gun, they congregate around him in the hope of securing his birds as they fall; they catch mice by waiting quietly seated near their holes until they come out, and never seize them whilst on the wing. They appear to have no fear of man, and are constantly seen around the watch-fires made by the hunters in their encampments. Such Sparrow-hawk Owls as visit Central Europe arrive about March, and depart early in the autumn; here as elsewhere they subsist principally upon mice, and frequent forests and woodland districts. The flight of this bird, unlike that of most Owls, is rapid and easy, but upon the ground it hops somewhat clumsily.

THE SNOW OWL.

The SNOW OWL (*Nyctea nivea*), as the largest of the diurnal species is called, frequents the same countries as the bird above described, and, like it, wanders to Southern Europe; but the Polar regions are its actual home, and there it may be seen living, not only inland, but on the coast, sitting in large numbers upon the icebergs, or scrambling with hasty steps over the surface of the ice-covered sea. The distinguishing features of the Snow Owl are its small head, well-developed ear, and thickly-plumed feet; the wing, in which the third quill is the longest, is of moderate size; the tail long and rounded; the beak powerful, and its hook short; the plumage thick, but not so soft as that of some of its congeners. The length of this species is from twenty-six to twenty-seven, and its breadth from fifty-six to sixty inches; the wing measures twenty-one, and the tail ten inches. The coloration of the plumage varies considerably, according to the age of the birds; such as are very old are either entirely white, or have a few small brown spots upon the forehead and quills; the younger the bird, the more distinct are these brown markings. The eye is a rich yellow, and the beak greyish black.

During the entire summer the Snow Owl remains in its native land, but when heavy snow begins to fall, and renders search for food impossible, it departs to warmer latitudes. According to Radde, the females are the first to leave, but are very shortly followed by their mates. When perched these birds look much like other members of their family, but when in flight exhibit a rapidity of motion and dexterity in steering their course, far exceeding that possessed by any other species of Owl, and so remarkably bold are they that, if wounded by a shot, they at once bear down upon the sportsman who has molested them, for the purpose of revenging the injury, and will also attack dogs, darting upon them, and seizing them after the manner of a Falcon. Whilst tarrying in Central Europe, they subsist principally upon lemmings, and should these prove scarce, attack squirrels, marmots, and other small quadrupeds: they pursue Wild Pigeons, Ducks, and Ptarmigans with great ardour, and are so daring in contesting the latter delicacies with the hunters that, according to Blakeston, they have been known to snatch the coveted prize out of the sportsman's bag, whilst it hung suspended at his back. Audubon had the good fortune to see some of these interesting birds busied in what we should have imagined an uncongenial occupation for an Owl, namely, "angling for fish." He tells us that whilst engaged one morning in shooting Wild Ducks on the banks of the Ohio, he observed a Snow Owl lying upon the rocky bank, apparently asleep, with its head turned towards the water: whilst noticing it, a fish rose to the surface, and, with the rapidity of lightning, was caught in the claws of the wily bird, who at once made off with its prize to a few yards' distance, and having devoured it, immediately returned to play the same clever trick upon other victims. In the winter season this species often seeks its food during the night, and so much vigilance does it display in these nocturnal excursions, that no object seen in the air is allowed to pass without proper investigation as to its edible properties. Holboell mentions having amused himself one moonlight night by constantly throwing up his hat to attract the attention of a Snow Owl, and was rewarded by inducing it to follow the unfamiliar object for nearly a quarter of a mile. The cry of this bird is harsh, and much resembles that of the Crow. The breeding season commences in June; the eggs, from seven to ten in number, are of a dirty white, and are deposited in a hole in the ground lined with a little dry grass. The young are fledged by the month of August, and are tended till this period with great affection by both parents. The female, who is also carefully fed by her mate during the period of her seclusion, exhibits great affection for her little family, and should a man approach so near the nest as to excite her suspicion, will fall to the earth, and lie as though dead or lamed, in the hope of diverting the stranger's attention from the brood to herself. Attempts to rear this remarkable Owl have hitherto usually proved unsuccessful.

The STONE OWLS (*Athene*) are small birds, with moderate sized heads, short round wings, which do not extend beyond two-thirds of the long straight tail, long legs, powerfully armed toes, and short beaks; the latter are compressed, and the upper mandible terminates in a hook. The aperture of the ear is smaller, and the feathers which surround it longer than in other diurnal species; the plumage is compact, and only partially covers the legs, the toes being overspread with a hair-like growth.

THE STONE OWL PROPER.

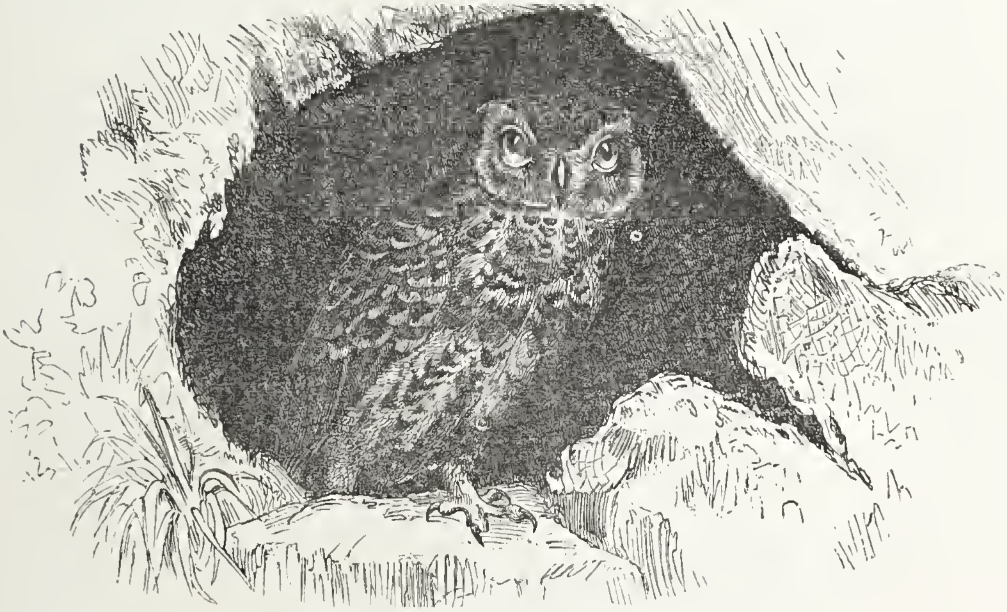
The Stone Owl Proper (*Athene noctua*) is about eight inches long, and twenty broad; its wing measures five inches and a half, and the tail three and three-quarters. The female is slightly larger than her mate. In the adult of both sexes the upper part of the body is dark mouse grey, irregularly spotted with white; the face is greyish white, the belly whitish, spotted with brown, except at the vent; the wing and tail-feathers are reddish yellow, spotted with white; the beak is greyish yellow, the foot yellowish grey, and the eye of a brimstone yellow. The plumage of the young is darker than that of their parents.

This bird inhabits the central parts of Europe as far as the south of Sweden, and is found throughout almost the whole of Asia. In some of the southern countries of Europe, it is replaced by the celebrated bird known to the Greeks as "Minerva's Owl" (*Athene indigena*). Two other varieties are also commonly met with, the one in Spain, the other in Northern Africa. Mountainous districts are avoided by the Stone Owls, who prefer living in the immediate vicinity of man, and often build their nests upon the roofs and steeples of the villages they frequent. The day is usually passed in some quiet nook, such as a tomb, old wall, or similar situation, and at night they sally forth in search of food, striking terror into the heart of many an ignorant peasant, as their harsh, unearthly cry resounds through the silence of the night. To such an extent do some of the peasants in Germany carry their absurd superstition respecting this Owl, as actually to

THE SNOW OWL (*Nyctea nivea*).

imagine that its notes distinctly express the words, "Komm mit, komm mit auf den Kirchhof, hof, hof," or, in plain English, that the sepulchral voice is forewarning either themselves or some members of their family of impending death, and speedy consignment to the tomb. In the southern parts of Europe, where Stone Owls are met with much more frequently than in Germany, familiarity has bred contempt, and these old wives' tales are entirely unknown. The flight of this bird is very peculiar, owing to the shortness of its wings, and much resembles that of a Woodpecker. Whilst perched it usually draws its head down upon its shoulders; but if attracted by some object, for it sees excellently well in the daylight, it sits erect and peers at it with so keen and intelligent an eye as fully to explain the reason that to this species was assigned the honour of attending on the Goddess of Wisdom.

The Stone Owls are extremely social, and live on very peaceable terms with their companions, dwelling in the same hole, and going together in search of prey. Twilight has scarcely set in before their voices are heard as they sweep about in pursuit of the small quadrupeds, birds, and insects upon which they subsist; the whole night is passed in pursuit of food, very much to the annoyance of many a weary sleeper, who is roused from pleasant dreams by the sudden dash of their bodies against the window as they vainly endeavour to get to the fire or taper burning within. During the breeding season they become extremely restless and noisy, and utter their strange cry throughout the whole day. The eggs, four to seven in number, are deposited about May in a hole in some old tree or building; the nestlings are hatched in a fortnight after the eggs are laid, and are reared upon mice, young birds, and insects. These Owls are frequently captured in Italy for the purpose of domestication, as they are easily tamed, and render themselves eminently useful in houses and gardens, by keeping the premises clear of mice and a variety of noxious insects. It is no uncommon thing to see three or four of them fastened to a perch in the stall of an Italian cobbler or tailor, who amuses himself by observing them as he plies his trade. These prisoners usually display great affection for their master, who rears them upon *polenta* when meat is beyond his means.


THE STONE OWL (*Athene noctua*).

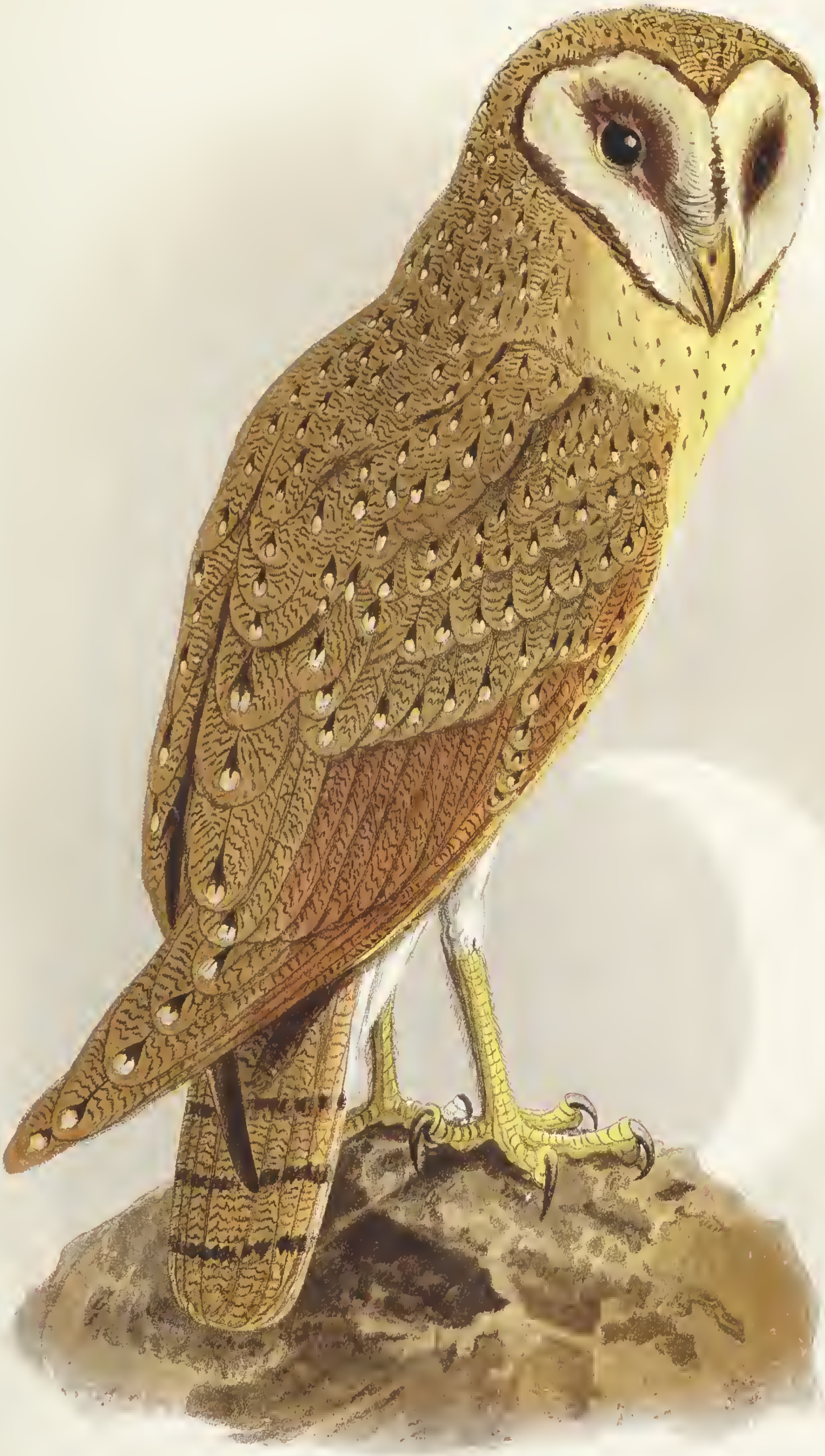
The BURROWING OWLS (*Pholeoptynx*) are a family of very remarkable birds, about the same size as and closely allied to the Stone Owls, but differing from these latter in their superior length of leg, and in some other trifling respects. The members of this group are recognisable by their moderate size, round head, large eyes, and elongated beak, rather arched at its roof, and terminating in a hook; the lower mandible is blunt at its tip, and slightly incised upon the margins. The wings, in which the fourth quill is longer than the rest, are long, powerful, and rounded at the extremity; the tail is short and straight, the tarsi high, slender, and only sparsely feathered in front, the sides and sole being covered with smooth skin; the toes are defended by rough horny plates interspersed with bristles; the talons are very slightly curved. The plumage, which is composed of small, soft, silky feathers, lies very compact; the feathers on the cheek-stripes are stiff and bristlelike, and the rest of those upon the face small and delicate.

THE BRAZILIAN OR RABBIT OWL.

The Brazilian or Rabbit Owl (*Pholeoptynx cunicularia*)—called by the natives the Caruje—is about eight inches long, and twenty-two broad; the wing measures six and the tail three inches. The upper part of the body is reddish brown, marked with oval and round white spots; the chin and eyebrows are white, the lower part of the neck reddish yellow, spotted with greyish brown, the breast greyish brown marked with yellow; the lower part of the belly is yellowish white; the eye is yellow, the beak pale greenish grey, as are the legs. This bird inhabits the Brazils, and is replaced in North America by

THE PRAIRIE OWL.

The Prairie Owl (*Pholeoptynx hypogæa*), a species so closely resembling it both in appearance and habits, that one description will suffice for them both. The Burrowing Owls are found in great numbers throughout the extensive plains of the American continent, perching upon hillocks, or scrambling in and out of the holes in which they live; they constantly frequent such excavations as have been made by anteaters, armadilloes, or prairie dogs, and instances have occurred in which they have been seen quietly creeping in and out of a hole tenanted, not only by the last-mentioned quadruped, but by a rattlesnake. Like the Stone Owl, they are capable of enduring the full light of the sun, and display considerable agility in evading pursuit; the colour of their plumage aids them considerably, as it closely resembles that of the ground on which they sit. They walk with ease and rapidity, and fly in an undulating course, but only remain for a short time upon the wing; they never frequent trees, but pass their lives almost entirely upon the earth. Whilst seated they indulge in all the strange attitudes, bowings, and tossings of the head with which their congeners amuse themselves, and greet the approach of a stranger with a fixed stare, their eyes shining like stars. Whoever attempts to capture one of them generally finds that his labour has been spent in vain, as they easily elude pursuit, and if hard pressed take refuge in one of the many holes that abound in their favourite haunts. They are remarkably social, even during the breeding season, and several pairs frequently lay their eggs in such burrows as are near together. The Brazilian species deposits its three white eggs upon the bare ground of the cavity selected, whilst the North American Prairie Owl on the contrary, according to Townshend, lays four whitish eggs, and lines its hole with fine grass; both subsist principally upon mice, snakes, lizards, and grasshoppers, and will occasionally eat crabs or such other inhabitants of the water as find their way to dry land. The North American Indians declare that these Owls retire into their holes about the end of August, in company with the prairie dogs, and there sleep away the winter months, but we should be inclined to imagine that their undeniable disappearance during the cold season is occasioned by their having gone for a time further south.



THE JAVA OWL — Strix Javanica

(two third Nat. size)

The SPARROW OWLS (*Microptynx*), so called from their diminutive size, are by far the most pleasing and elegant group of their family, and are found throughout all parts of the globe, with the exception of Australia; in the southern portions of Asia, America, and Africa, they are particularly numerous. Extensive forests are their favourite resorts, and there they may be seen flying about during the entire day in search of food.

THE EUROPEAN SPARROW OWL.

The EUROPEAN SPARROW OWL (*Microptynx passerina*) is the species we have selected as a type of the above group. Its length does not exceed six inches and a half, and its breadth fifteen and a half; the female is about an inch longer and one inch and a half broader than her mate. The body of this bird is slender, its head small, the beak powerful, and much curved and incised upon the margin of the upper mandible. The wing, in which the third and fourth quills are the longest, is short, the tail of moderate size, the foot short and thickly feathered, the facial disc is but slightly developed. The upper part of the body is mouse grey, spotted with white, the belly white, marked longitudinally with brown, the face of a mottled greyish white, the beak greyish, and the eye bright yellow; the tail is adorned with four, and the wing with several white lines. The female is of a darker hue than her mate, and has two dark lines under the eyes; brown predominates in the coloration of the young.

Although very numerous in the northern parts of Europe, and by no means rare in the central portion, this species is constantly overlooked, by reason of the smallness of its size, and because as it flies by day, and has a cry unlike that of most of its family, ordinary observers do not recognise it to be what it is—a Dwarf Owl; its habits, therefore, have been but little remarked, and it is seldom met with either in ornithological collections or in aviaries. Those few writers who have been at the trouble of making themselves acquainted with this most interesting bird, describe it as being agile, cunning, and active as a Parrot, as it hops about among the branches of trees in pursuit of the insects upon which it mainly subsists; it also consumes mice and small birds, plucking the latter carefully before devouring them. It is not uncommon to see this lively little Owl hopping about the Scandinavian villages when the snow lies heavy upon its haunts in the forest. It is easily summoned from the trees by those who can imitate its simple call-note, and may often by this means be led to a considerable distance. When perched its body appears to be far more slender in proportion to its size than that of other species, and Naumann describes its small broad face as looking more like that of an ape, than presenting the cat-like appearance with which we are all familiar in the generality of Owls. Its flight is rapid and undulating. The eggs are deposited in holes of trees, from the inmost recesses of which the voices of the parents may sometimes be heard as they summon each other. The hole is usually lined with a bed of moss and dry leaves, and upon this the eggs are deposited; these have a thick, smooth, white shell, are oval in shape, and about an inch long.

The EARED OWLS or UHUS (*Bubones*) constitute a group distinguished by a tuft of feathers growing behind each ear, and presenting the appearance of a pair of horns. The size of these birds varies considerably, some being very large while others are comparatively diminutive. In all the head is bulky, the wings blunt, the tail short and nearly straight at its extremity, the feet of moderate size and covered with feathers. The plumage, which is thick and lax, is composed of broad feathers. The beak is thick and slightly curved, the claws very long and much hooked; the eye is large, flat, and of a bright yellow; the tufts behind the ears of no great size, and the feathers upon the face only slightly developed. Several species of Uhu are found

THE UHU AT BAY.

in Southern Africa, but the northern portions of our globe must be regarded as their actual home, from whence they wander forth occasionally to other regions, but live and breed for the most part in their native lands. All are *nocturnal* Birds of Prey, and pass the entire day in such localities as afford them shelter from the sun, whose rays they studiously avoid, though they see with ease in the daylight. The larger species of Uhus live alone or in pairs, but the smaller are constantly met with in considerable flocks, except during the breeding season. These birds exhibit an extraordinary degree of good fellowship towards their congeners, and many touching stories have been told of their kindly behaviour towards each other; they are, however, inferior to the Diurnal Owls as regards their activity and intelligence.

THE UHU (*Bubo maximus*).

THE UHU.

The UHU (*Bubo maximus*), King of the Night, as it has been aptly called, is the largest species of Owl with which we are acquainted; its length often exceeding two feet, and its breadth five feet; its wing measures sixteen, and its tail ten inches. The rich soft plumage of this bird is of a dark rust red, streaked with black upon the upper parts of the body, and on the under side reddish yellow, longitudinally striped with black; the tufts behind the ears are black marked with yellow, the throat is nearly white, and the wing and tail feathers streaked alternately with brown and yellow; the beak is deep blueish grey, and the scales upon the feet of a lighter shade of the same hue; the iris is rich golden yellow, encircled by a red line. The male and female are alike in colour, but the young are yellower than the adults. Many slight variations are observable in the plumage of such as inhabit different countries. This Uhu is found occasionally throughout the whole of Europe and the northern parts of Asia, and is replaced in Africa by two other species, viz.:—The SHORT-EARED UHU (*Bubo ascalaphus*) which inhabits the north-eastern provinces, and the MILK-WHITE UHU (*Bubo Nyctaëtos-lacteus*), found in the central portions of that continent; there is also a North American species, known as the VIRGINIAN UHU (*Bubo Virginianus*). So closely do these birds resemble each other that one description will suffice for them all. Their favourite haunts are mountainous districts and extensive forests, as in such situations they can lead a quiet and retired life. It is not uncommon for a pair to remain for years upon the same spot, if they are fortunate enough to escape the observation of man; still they are occasionally met with, not only living, but breeding in the vicinity of human habitations; we ourselves found a couple that had taken up their quarters and made their nest upon some fortifications near a large town. During the day they remain quietly concealed in their holes, where they are scarcely distinguishable on account of the sombre colour of their plumage, but though neither timid nor helpless in the daylight, instinct has taught them to avoid encountering the sunshine, and it is only when evening has fully set in that they sally forth to reconnoitre and seek their prey. So well do the feebler denizens of the forest know what they have to expect from this dreaded enemy, that should one of them chance to espy the Uhu as it crouches within its hole, a loud note of terror immediately conveys the appalling intelligence to its companions, whose voices at once unite in giving the huge and murderous foe a serenade that is neither harmonious nor complimentary. During the breeding season, combats between the males are of frequent occurrence, and then it is that the cry of the Uhu is heard in all the unearthly tones that have been so often supposed to proceed from demons, or some of the fanciful crowd of beings with which popular superstition has peopled the forests. Indeed, this species may be truly accused of "making night hideous," as it flies in search of the rats and mice upon which it principally subsists. "The favourite residence of the Virginian Horned Owl," says Wilson, "is in the dark solitudes of deep swamps, covered with a growth of gigantic timber, and here, as soon as evening draws on and mankind retire to rest, he sends forth such sounds as scarcely seem to belong to this world. Along the mountainous shores of the Ohio, and amidst the deep forests of Indiana, alone, and reposing in the woods, this ghostly watchman has frequently warned me of the approach of danger, and amused me with his singular exclamations. Sometimes sweeping down and around my fire, uttering a loud and sudden 'Waugh, O! Waugh, O!' sufficient to have alarmed a whole garrison. He has also other nocturnal solos, one of which very strikingly resembles the half-suppressed screams of a person suffocating or throttled."

Richardson gives the following instance of the terror this Uhu so frequently excites:—"A party of Scotch Highlanders, in the service of the Hudson's Bay Company, happened in a winter journey to encamp after nightfall in a dense clump of trees, whose dark and lofty stems, the growth of centuries, gave a solemnity to the scene that strongly tended to excite the superstitious feelings of the Highlanders. The effect was heightened by the discovery of a tomb which, with the natural taste often exhibited by Indians, had been placed in this secluded spot. Our travellers, having finished their supper, were trimming their fire preparatory to rest, when the slow and dismal notes of the Horned Owl fell on the ear with a startling nearness. None of them being acquainted with the sound, all thought that so unearthly a voice must be the moaning of the spirit of the departed, whose repose they imagined they had disturbed by inadvertently making a fire of the wood of which his tomb had been constructed. They passed a tedious night of fear, and with the first dawn of day hastily left the ill-omened spot."

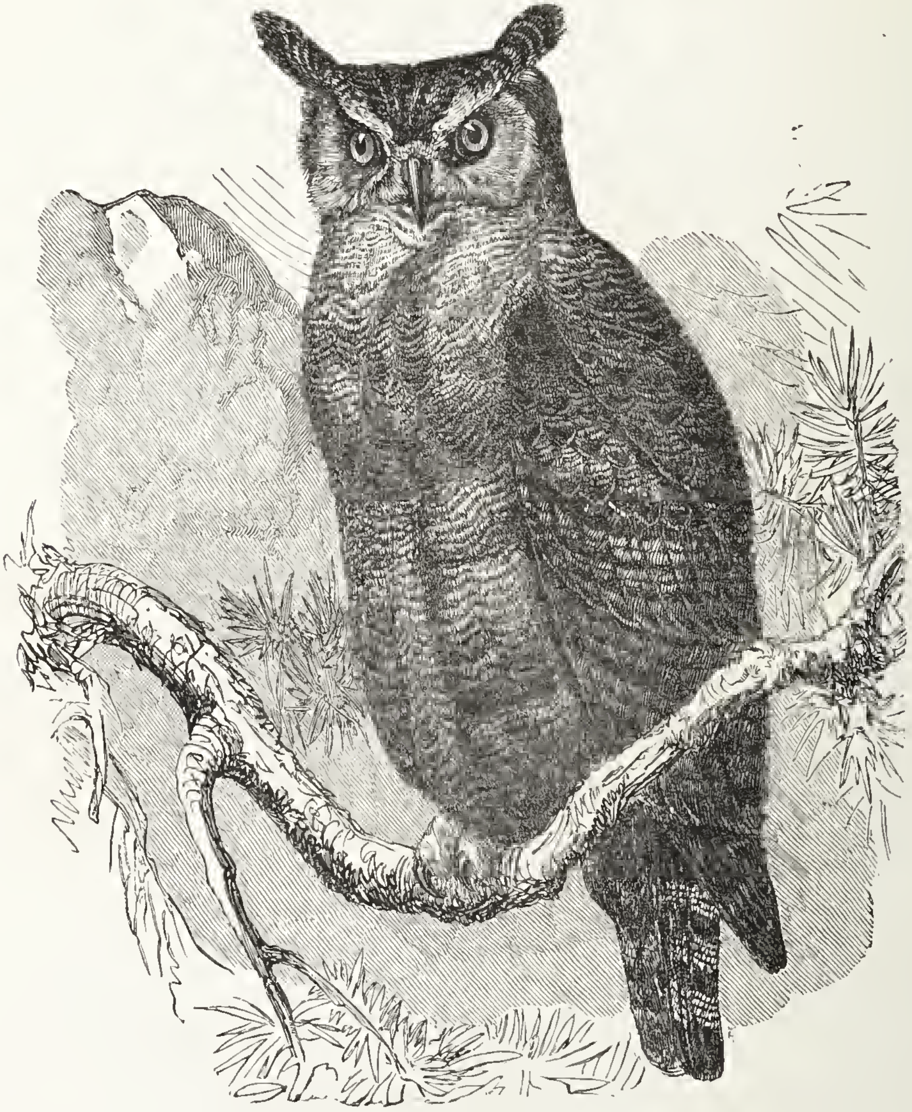
The Uhu devours Geese, Partridges, Buzzards, and many other birds and quadrupeds in large numbers; some writers have gone so far as to accuse it of seizing upon young stags, calves, and even Eagles, but such assertions are very improbable, though the statement that it will attack hedgehogs has been fully substantiated; the prickly ball being forced to unroll by means of powerful strokes with the beak, which completes its destruction before the victim has time to coil itself up again. The period of incubation usually commences about March, and, strange to say, no sooner are the quarrels about the possession of a mate over than the cruel, violent male is suddenly transformed into the most faithful and tender of spouses, and exhibits such affection and devotion to his family as is seldom met with. Building, however, is not an art in which the Uhu excels; the eggs are therefore, if possible, deposited in the deserted nest of a Buzzard, Raven, or Black Stork, and should one of these not be found, the parent is content to drag together a few twigs and branches, and make therewith a bed in the cavity it has selected for a breeding-place. Occasionally, the comfort of this slight arrangement is dispensed with, and the two or three eggs are deposited upon the bare ground at the bottom of the hole. The female alone broods, but is meanwhile most carefully tended by her mate; and both parents assist in defending their domicile from intrusion, attacking with fierce courage not only beasts of prey, but men. Should the nest appear to have been disturbed, the mother has been known to carry off her charge to a safer retreat. Count Wodzicki mentions an instance that came under his own notice in which a young Uhu was fed at first by its parents, and afterwards, as soon as they were fledged, by its brother nestlings, for the space of two months after it had been made prisoner and fastened to a perch outside the forester's lodge. This Uhu will live for many years in confinement, but seldom become, really tame; the African species is perhaps an exception to this rule, for we saw one of these birds in Stockholm that not only allowed itself to be stroked or playfully seized by the beak, but would come to its master when called by name. "When wounded," Audubon informs us, "the Uhu exhibits a revengeful tenacity of spirit, scarcely surpassed by the boldest of the Eagle tribe; disdaining to scramble away, it faces its enemy with undaunted courage; protruding its powerful talons, and snapping its beak, it will defend itself to the uttermost against both man and dog."

The Malay peninsula and India proper are inhabited by a group of Owls, in many respects resembling the species above described, but with this difference, that they subsist principally upon fish, crabs, and other inhabitants of the water. All these birds are large, and have well-developed tufts around the ears; the beak is powerful and of moderate size, while the upper mandible is compressed, and terminates in a hook; the feet are long, and the toes bare. The plumage is not thick, the ears are small, and the wings, in which the fourth quill is longer than the rest, do not extend as far as the tip of the tail.

THE BROWN FISH OWL.

The Brown Fish Owl (*Ketupa Ceylonensis*), called by the Cingalese "Utum," is from twenty-one to twenty-three inches in breadth, the tail measures eight, and the wing sixteen inches. The upper part of the body is of a deep reddish tinge, the feathers upon the head and nape being streaked with dark brown, while those upon the back and upper wing-covers are marked with brown and reddish yellow. The quills are reddish or yellowish brown, spotted with white upon the inner web; the tail is brown, tipped and streaked with a paler shade, the face is brown, and its bristle-like feathers ornamented with white and black; the chin and breast are white, partially striped with brown. The rest of the plumage is reddish brown, streaked with numerous dark lines. The eye is bright yellow, the eyelids purplish brown, the foot and beak pale greyish yellow.

The Fish Owl is found extensively throughout the whole of India and Ceylon, and is also met with in Burmah and China. In the Malay peninsula it is replaced by a very similar species. Bernstein tells us that the Fish Owl frequents woodland districts, and that, though it often lives in the immediate neighbourhood of villages, never actually takes shelter about the houses. Jerdon informs us that he usually saw it perching close to lakes, ponds, or rivers, watching for the fish upon which it mainly subsists. It also devours lizards and snakes, as well as rats and mice. Like most of its family this bird remains concealed during the day, and only issues forth at night to obtain its prey: this diurnal seclusion does not, however, arise from the fact that it cannot bear the light, for experiments have proved that it sees any object readily, even when exposed to the full glare of the sun. The voice of the Fish Owl is constantly heard throughout moonlight nights, and may be represented by the syllables Hu, hu, hu, hi." A nest found by Bernstein was nothing more than a depression



THE VIRGINIAN UHU (*Bubo Virginianus*).

in some moss and lichens that had overgrown the trunk of an old tree; it contained but one round, smooth-shelled, white egg.

THE WOODLAND OWL.

The **Woodland Owl** (*Otus sylvestris*) in many respects resembles the Uhu, from which it is distinguished by the slenderness of its shape, its long wings, in which the second quill exceeds the rest in length, its short feet, and a large tuft behind each very highly developed ear. The whole body is of a dull reddish yellow, spotted and marked with greyish brown above, and with dark brown beneath. The ear is whitish within, and black on its exterior; the face is greyish yellow. The length of this bird is from thirteen to fourteen inches, its breadth from thirty-five to thirty-eight inches.

THE MARSH OWL (*Otus brachyotus*).

The Woodland Owl abounds throughout Europe and Asia, and is particularly numerous in the central portions of both continents. In North America it is replaced by a very similar species, which, until recently, was supposed to be identical with that inhabiting the Eastern hemisphere. These birds, as their name indicates, dwell in and around woods and forests, in the recesses of which they remain during the day, only flying by night in quest of food. In their habits they resemble the Uhu, but are less cruel and violent in their disposition. During the breeding season they live in pairs, after that period they assemble in flocks, and sweep together over the face of the country, but never actually migrate. So fearless is this bird, that should a man approach, it not only remains quietly upon its perch, but in some instances will not stir until shaken from the branches. Shrew mice, field mice, and small birds constitute its principal food, and we must therefore pronounce it to be a benefactor both to the gardener and the farmer. The Woodland Owl rarely constructs its own nest, but takes possession of one that has been deserted by some Crow or squirrel. The four white eggs that constitute its brood are laid about March. The female continues sitting for three weeks, and is, meanwhile, fed and carefully tended by her mate, who remains almost constantly by her side, and expresses his affection by frequently uttering loud cries, and occasionally beating the air violently with his wings. The nestlings require an unusual amount of food, for which they clamour incessantly; if taken before they are fledged they may be readily tamed.

THE MARSH OWL.

The Marsh Owl (*Otus brachyotus*) is closely allied to the bird above described, and is found in all parts of the globe, with the exception of New Holland. The head of this species is smaller than that of the Woodland Owl, and its long wings reach far beyond the tail. The tufts above the ears are composed of from two to four feathers, and the plumage is principally of a bright but pale yellow; the feathers upon the head and lower parts of the body have black shafts, whilst those of the wing-covers are yellow upon the outer and black upon the inner web; they are likewise tipped with black. The quills of the tail are striped with greyish brown. The radiating feathers upon the face are whitish grey, and the eyes light yellow. The young are somewhat darker than their parents. The length of this bird is from fourteen to sixteen inches, and its breadth from forty to forty-two inches.

The peculiar characteristics of the Marsh Owls are their preference for fens and bogs, and their practice of wandering from one place to another; they frequent all the northern parts of the globe, and are by no means rare in any of the countries in which they are seen; in the more southern latitudes they appear about October, and leave again in the month of March. At night they fly softly and slowly in search of mice, lemmings, and insects, upon which they chiefly subsist; and usually pass the day amidst the grass and reeds that overspread their favourite haunts; if disturbed they crouch to the ground, and allow the enemy to approach quite close, then, rising suddenly, they hover in the air, or soar to a very considerable height. Their voice is gentle, and their anger expressed by snapping violently with the beak. The nest is extremely simple in its construction, and invariably placed upon the ground. The female lays three or four white eggs about May.

The DWARF EARED OWLS (*Scops*) are recognisable by their large heads, long wings, in which the second quill exceeds the rest in length, short slightly-rounded tail, high sparsely-feathered tarsi, and bare toes. The beak is powerful and much curved, the plumage smooth and variegated, the ear-tufts short, and the feathers that surround the aperture of the ear but slightly developed. The members of this group inhabit Southern Europe, Asia, Africa, and America. From these we shall select the European species as a type of the rest.

THE DWARF EARED OWL.

The Dwarf Eared Owl (*Ephialtes Scops*) is from six to seven inches long, and from eighteen to nineteen broad; the wing measures five inches and two-thirds, and the tail about two and a half. The plumage is very striking; the upper part of the body is reddish brown, shaded with grey, and streaked and spotted with black; upon the wings the spots are white, the region of the shoulder is dashed with red; the under side is a mixture of brownish red and greyish white. The beak and feet are blueish grey, and the eyes light brimstone yellow. The sexes closely resemble each other in plumage, but that of the young is more sombre and less variegated.

The Dwarf Eared Owls are numerous in Southern Europe, and at certain seasons are met with in its more central portions, where they arrive early in the year, and leave again for warmer latitudes about September. Their migrations are performed in large flocks, and often extend as far as the interior of Africa. They generally resort to fields, vineyards, and gardens, exhibit no fear of man, and may frequently be seen perching upon the trees that grow near crowded thoroughfares. During the day they conceal themselves under the vines, or amongst the branches of trees, the stems of which they so much resemble in colour as to be in but little danger of detection so long as they remain quiet. It is not until evening has fully set in that they sally out in quest of food, and hover, with something of the movement of a Falcon, close to the surface of the ground, in quest of mice and similar fare. The nest is built in a hollow tree, and the eggs, three or four in number, are laid in the autumn.

The NOCTURNAL OWLS are distinguished from those above described, by their large round heads, broad discs of feathers upon the face, and wide apertures to the ears, which are unprovided with tufts. The wing is usually rounded, and the tail and foot vary considerably both as to size and form. The plumage is either very thick, or lies close and compact. All the members of this group sleep or doze away the whole day, and only sally forth when the sun's last rays have disappeared, for in its light they are perfectly helpless and almost blind.

THE TREE OWL.

The TREE OWL (*Syrnium aluco*) is recognisable by its large head and comparatively small ear-apertures, as well as by its thick neck, slender body, short tail, thickly-feathered feet, and short toes. Deep grey or reddish brown predominates in the coloration of the plumage; the back being, as is usually the case, darker than the under parts of the body; the wings are regularly marked with light spots; the nape, region of the ear, face, beak, and tips of the toes are grey; the eye dark brown, and the skin that surrounds it of a flesh-colour.

This species is frequently met with throughout the whole of Europe, if we except its extreme north and south—it is but rarely seen in Spain, and never, we believe, in some parts of Russia. Woodland districts are its usual haunts, but it also occasionally seeks shelter among ruins, or even in nooks of houses. During the summer it passes the day perched close to the trunk of some old hollow tree, in the interior of which it hides itself during the winter.

The movements of this species are extremely slow and heavy, and it rarely rises above a few feet from the ground whilst seeking for the mice upon which it subsists. It also devours noxious insects of various kinds in considerable quantities, and thus renders important service both to the gardener and farmer. Martin mentions his having found no fewer than seventy-five large caterpillars in the stomach of a Tree Owl that he had killed immediately after it had finished this very substantial repast. In disposition it is dull, and more uninteresting than almost any other bird with which we are acquainted. Its cry is a loud, resonant "Hu, hu, hu," and often rings through the darkness like a burst of demoniacal laughter. The breeding season commences about April or May, and during that period these, at other times apathetic sluggards, seem roused to something like animation, and make the woods re-echo with their discordant note. The eggs, two or three in number, are laid in cavities of trees, or sometimes in roofs or chimneys, upon a slight bed of hair, wool, or moss; the deserted nest of some other bird is also frequently employed for the reception of the young family. The eggs are oval, rough-shelled, and white. The female alone broods, and is meanwhile fed with great tenderness by her mate. Both parents are much attached to their offspring. These birds may be readily tamed, and soon become accustomed to those that feed them. Gadamer tells us that a Tree Owl in his possession used to come out every evening and stand before the open stove, stretching out its neck with every demonstration of keen enjoyment.

THE HAIRY-FOOTED OWL.

The Hairy-footed Owl (*Nyctale dasypus*) is distinguished by its unusually broad head, large ear-apertures, and well-developed facial discs; the wings are rounded, the tail of moderate size, and the short and rounded tarsi, covered with long, thickly-set feathers; the plumage is soft and silky. The upper parts of the body are mouse grey, with large white spots; and the under side white, distinctly streaked with greyish brown. The wings and tail-feathers are mouse grey, with irregular white stripes; the long feathers about the face whitish grey, mottled with black; the beak is greyish yellow, and the eye bright gold colour. The young are of an uniform reddish brown, with white spots upon the wings and tail. The length of this species is from nine to ten, its breadth from twenty-one to twenty-three inches, and the tail about six or seven inches.

THE TREE OWL (*Syrnium aluco*).

These birds inhabit Central Europe, and are likewise found in the northern parts of Asia and America; they are never seen in any large numbers, and are reckoned among the greatest rarities in our aviaries, owing to the difficulties attendant on their capture, for their retreats are usually in the deepest recesses of woods and forests, which they seldom quit. A hollow tree is the favourite resort of a pair of Hairy-footed Owls, and there they remain during the whole day, but at night fly away together in search of food. They appear carefully to avoid the light of the sun, and are extremely timorous. Should they be molested by the sportsman, they at once lie down close behind the branch in which they are perched, and thus effectually put themselves out of both sight and gunshot. Their voice somewhat resembles the syllables "Wi, wi, wi," and is not unlike the whimper of a child; this cry is heard principally in the evening and at early morning. The eggs, three or four in number, are deposited about April or May in a hollow tree, and are similar to those of the Stone Owl. Mice, insects, small birds, and bats constitute their principal food; the latter, according to our own observations, are caught on the wing. As in the case of the Uhu, all the small birds seem to delight in mobbing and harrying this dreaded foe, whenever they discover it sitting in the day-time perched and perfectly helpless. The young are destroyed in great numbers by the larger species of Owls and other enemies. A Hairy-footed Owl kept in Dr. Brehm's house soon became extremely tame, and though at first it invariably took refuge in the darkest corner of its dark cage, it soon lost this habit, and hopped about even during the day; it took its food from the hand of its master, and carried it to a quiet nook to be devoured, concealing the prize with its feathers whilst it ate. It seldom drank, but bathed almost daily when the weather was warm; if cold, it crouched upon the ground, drawing up its feet under its body. Its voice sounded occasionally somewhat like the low bark of a dog.

THE BARN OWL (*Strix flammea*).

The VEILED OWLS (*Strix*) constitute one of the most remarkable groups of this very important family. Their body is slender, the neck long, the head large and broad, the wings of great size, and the tail of medium length, the legs are high, the plumage silky and very varied in its coloration. The beak is elongate, straight at the base, hooked at its tip, and the under mandible slightly indented. The eye is small and more arched than that of other species; the ear appears unusually large, owing to the long feathers by which it is encircled, and which form a heart-shaped frill around the face, the tarsi are but slightly plumed, and are covered upon the lower portion with fine bristles; the toes are almost bare, the claws long, thin, and pointed.

The Veiled Owls are found in all parts of the world, dwelling in populous districts, in and around villages, and when these are not to be found, seeking shelter in hollow trees; they especially delight in old ruins, and are constantly met with in church steeples, ancient castles, and dismantled towers, as such buildings afford them safe hiding-places until the evening closes in. All the members of this group so closely resemble each other that they might readily be mistaken for one and the same species, and all are equally remarkable for the beauty of their plumage.

KIRCHHOFF'S VEILED OWL.

Kirchhoff's Veiled Owl (*Strix Kirchhoffii*), discovered by Dr. Brehm whilst in Spain, and called after one of his friends, is so extremely beautiful as to render an adequate description almost impossible. The upper portion of its plumage is of a pretty reddish yellow, mottled with grey upon the shoulders and middle of the back, and delicately spotted with black and white; the under parts are of dazzling whiteness, and as glossy as the softest satin. The discs of feathers upon the face are spotted and edged with reddish brown.

THE BARN OWL.

The Flame Owl, or Barn Owl (*Strix flammea*), is from twelve to fourteen inches long, and from thirty-six to thirty-nine inches broad; the wing measures about eleven, and the tail from four and a half to five inches. The upper part of the plumage is dark grey; the nape and back of the head reddish yellow, delicately marked with tiny black and white streaks; the under side deep reddish yellow, spotted with brown and white; the long feathers upon the face are either entirely of uniform reddish white, or become gradually lighter towards the tip; the quills are rust red upon the inner and whitish upon the outer web, spotted and striped three or four times with dark brown; the reddish yellow tail-feathers are striped with black, and have a broad dark grey patch, mottled with white at the extremity; the beak and cere are reddish white; the bare portions of the foot blueish grey, and the eye dark brown. The female is of a somewhat duskier hue than her mate.

Old ruins of every description are constantly frequented by these birds, such lofty mountain ranges as are barren of trees they carefully avoid, but in every other situation are more or less frequently met with. The Barn Owls are stationary in their habits, and often remain for years in the same locality, spending the day in some retired nook, and sallying forth at night in quest of prey. Their sleep is extremely light, and, if disturbed, their contortions are amusing to behold, as they rock themselves from side to side upon their legs, and peer blindly at the intruder, expressing their uneasiness by a variety of the most extraordinary grimaces which we can conceive even an Owl's face to be capable of. If very hard pressed they seek safety in flight, and thus prove that they are not so completely blinded by the light as is popularly supposed. When evening sets in their active life commences, and they may then be constantly seen and heard, sweeping slowly about, and uttering their dismal cry at short intervals, as they flit over the ground, or settle for a short time upon the house-tops. Rats, mice, moles, and small birds, as well as the larger kinds of insects, constitute their principal food. They have frequently been accused of attacking Pigeons, but this we believe is not the case.

So adroit and rapid are the manœuvres of these Owls when hungry, that their victims have but small chance of escape, and we would therefore warn such of our readers as are tempted to try the effect of domestication upon them to keep a very sharp watch indeed upon any other feathered pets that may be in the same house. A friend of Dr. Brehm's, after endeavouring to tame one of these birds for about a week, ventured on the strength of its good training to leave it for one single minute in his dark room, while he hurried away to obtain a light; when, lo, upon his return he beheld the Owl behind a stove, quietly finishing the remains of his pet Linnet, which it had seized, killed, and more than half devoured in that short space of time! This same Owl would often eat as many as fifteen mice during the day. In Spain a strange idea is very prevalent respecting this species, it being supposed to enter the churches and consume the olive oil employed in the lamps by which those buildings are lighted. For our own part we believe that such a charge is quite unfounded, and that the Owl in this case is no more guilty of the offence, than the terrible cat facetiously described as working so much havoc in English kitchens. The Spaniards make use of the body of this bird extensively in medicine, after it has been soaked in oil. According to Pennant "the Monguls of Tartary pay the Barn Owls almost divine honours, because they attribute to one of them the preservation of Ghenghis Khan, the founder of their empire. That prince, with his small army, happened to be surprised and put to flight by his enemies; when forced to conceal himself in a little coppice, an Owl settled on the bush under which he was hid, and induced his pursuers not to search there, as they thought it impossible that any man could be concealed in a place where that bird would perch."

It was formerly supposed that the Barn Owls laid their eggs about April, but recent observations have proved this statement to be incorrect. The breeding season really commences in the autumn, and during this period the happy pair testify their love and devotion to each other by loud and constant cries, as they fly sportively together around and over the towers and turrets near which they have taken up their abode—nest there is none, the young family being reared at the bottom of a hole, or in some retired corner. The nestlings are reared upon mice, and are most carefully tended by their parents, who nurse their progeny so devotedly that they have frequently been known to carry food to them for weeks or even months, after they have been captured and shut up in a cage.

THE GAPERS (*Hiantes*).

THE order to which we have given the name of GAPERS (*Hiantes*) includes a considerable number of families, which, though differing considerably from each other in some trifling respects, are related in many essential particulars. Nearly all these birds are of small or moderate size, and are recognisable by their slender though powerful body, short neck, large and remarkably flat head, long narrow-pointed wings, and short feeble legs. Their beak is short, broad, and flat, tapering towards its extremity, and although somewhat varied in its formation, is always surrounded by a stiff, bristle-like growth; the gape is so unusually wide as to constitute the most remarkable feature they all have in common. The plumage is sometimes harsh and dusky, and sometimes soft, glossy, and brilliantly coloured. The birds belonging to this order principally frequent the warmest portions of our globe, and are rarely met with in high northern latitudes, as the latter afford them but a very scanty supply of the insects upon which they mainly subsist. Heat is essential to the abundance of their favourite food, and it is for this reason that such species as inhabit the temperate zones are compelled to quit their native lands for sunnier climes as winter approaches. Some occupy forests; others mountains, valleys, or open plains; and many, when about to make their nests, seek the immediate vicinity of man. All the members of this order are possessed of extraordinary powers of flight, and pass the greater part of their lives in pursuing their tiny prey through the realms of air. Upon the ground they move awkwardly and slowly, and are usually scarcely more adroit in climbing among the branches of trees. The sight of all these birds is excellent, but their other senses appear to be only slightly developed. In temper they are social, brisk, and restless, and exhibit much tenderness towards their young. Their intelligence, however, is by no means great; indeed, some species are unquestionably extremely deficient in this respect. So very various is the formation of the nests, and the number and appearance of the eggs of the different families into which this order is divisible, that we shall not attempt to mention them here, but will describe them with the group or species to which they belong.

SWALLOWS.

THE SWALLOWS (*Hirundines*) constitute the foremost family of this order, and are readily distinguished by their small, delicately-formed body, broad breast, short neck, and flat head; their beak is short, flat, broad at its base, and terminates in a slight hook; the gape is so wide as to extend as far as the eyes. These birds have no crop; their broad, flat, horny tongue is sharp at its edge, divided at its tip, and furnished with small tooth-like appendages towards its base. The feet are broad and feeble, the toes, three of which are placed in front, are very weak and the claws are slender. The wing is long, narrow, composed of nine quills, and sharply-pointed at its extremity; the tail forked, containing twelve feathers; those at the exterior often far exceeding the centre ones in length. The plumage is composed of small compact feathers, and frequently exhibits considerable metallic lustre. Both sexes are alike in colour, but the young differ somewhat from the adult birds.

Swallows are found throughout every division of both hemispheres, and occupying every latitude, but they rarely breed and are far from numerous within the limits of the Polar regions. Such species as inhabit the torrid zones do not migrate, whilst those that visit comparatively cold countries go to warmer climes as winter approaches, quitting and returning to their native lands at the appointed period with such extraordinary regularity that the time of their appearance or departure may be calculated almost to a day. As regards their intelligence, these birds are far superior to most other members of the order. Their pleasing twitter may almost be termed a song, and their flight is distinguishable by an ease and rapidity that has rendered it proverbial. All Swallows bathe and drink whilst upon the wing. They subsist upon insect diet, which they obtain by darting upon their tiny victims with marvellous velocity as they skim through the air, and swallow them entire. They consume beetles and flies in enormous quantities, for their appetite is insatiable; but bees and wasps, or any insect armed with a sting, they never touch, as their wonderful instinct renders them fully aware that such morsels are not to be snapped at with impunity. Naumann mentions that having upon one occasion put a wasp into the beak of a young Swallow, the bird died almost immediately from the effects of the stinging it received whilst swallowing the insect. Some species form most artistic abodes with bits of clay consolidated by means of the glutinous spittle with which the members of this family are provided; whilst others excavate deep holes for the reception of the young, the same nests being employed for many successive years. The females alone brood, and lay from two to six eggs.

THE CHIMNEY SWALLOW (*Cecropis-Hirundo-rustica*).

The TRUE SWALLOWS (*Cecropis*) are characterised by their slender and powerful body, wide flat head, broad but very slightly curved beak, long wings, extending beyond the deeply-forked tail, moderate sized foot, and lax plumage, which upon the upper parts gleams more or less with metallic lustre.

THE CHIMNEY SWALLOW.

The CHIMNEY SWALLOW (*Cecropis-Hirundo-rustica*) is seven inches long and twelve broad, the wing measures four and a half and the tail about three inches. The upper part of the plumage is glossy blueish black; the brow and throat are chestnut brown, a broad line upon the head black, and the other parts of the body reddish yellow. The five outer feathers of the tail are adorned with round white spots upon the inner web. The female is not quite so dark as her mate, and the young are still paler. This species breeds throughout the whole continent of Europe, if we except its extreme north. In the northern parts of Asia and Africa it is replaced by a very similar species—the RUST-RED SWALLOW (*Cecropis cahirica*, or *Cecropis Boissoneauti*), which is very numerous in Egypt. The NORTH AMERICAN HOUSE SWALLOW (*Cecropis Americana*), the SOUTH AMERICAN RED SWALLOW (*Cecropis rufa*), and the *Cecropis neoxena* are also very nearly allied species, but somewhat less in size than their European relative.

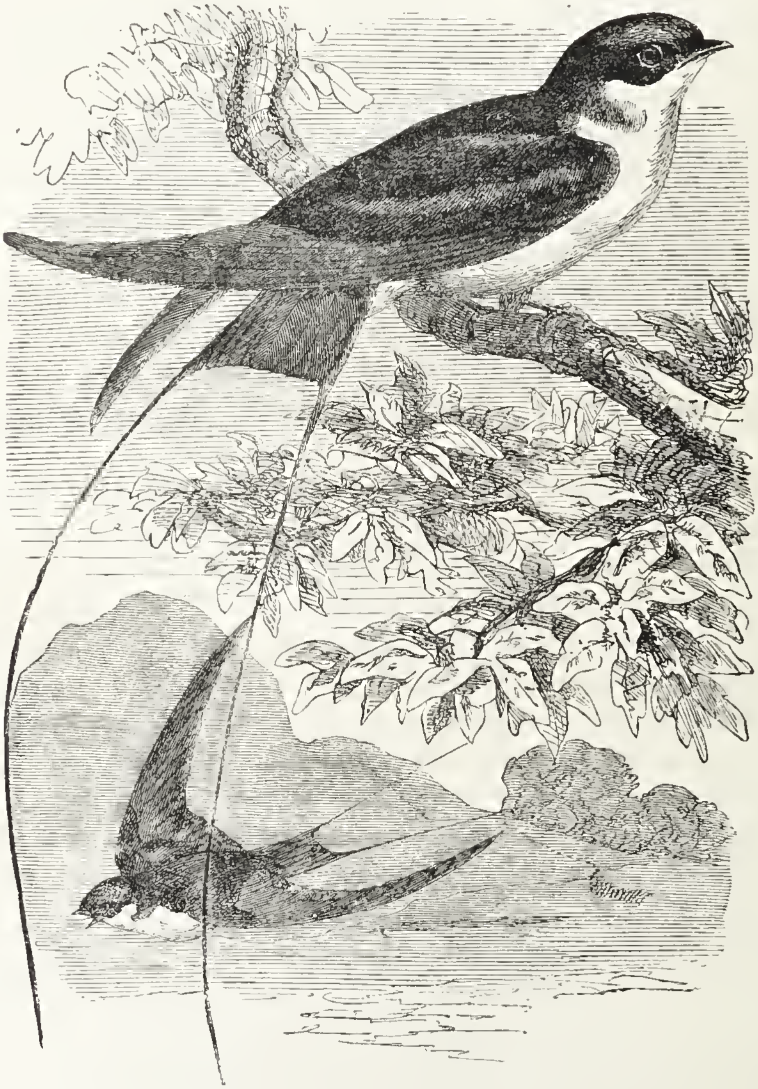
We are desirous our readers should fully understand that the Chimney Swallow is essentially a native of Europe, and that when it wanders to warmer regions it does not "homeward fly," but exactly the contrary, being then compelled, by reason of the approach of winter, to leave its native land "in distant climes to roam," until such time as the breath of spring has caused the snow and frost completely to disappear, and the leaves have again burst forth upon the trees. When these migrations are about to commence, the Swallows assemble in very large flocks, which congregate upon the trees or houses, and keep up such an incessant twitter and commotion as would lead an observer to suppose that they are discussing the important journey they are about to undertake. The Swallows usually leave Europe about September or October; according to our own observation, they often travel as far south as eleven degrees north latitude, and are constant winter guests in India and Ceylon; by the end of April, however, they are with us again, and have either sought out their old nests or chosen a proper spot on which to build. For this purpose, they generally select such districts as are in the vicinity of water; and, "although the Chimney Swallow has received its most general name from the somewhat peculiar position in which it frequently builds its nest, it by no means confines itself to chimneys, but builds readily in almost any suitably-sheltered position. Thus, the disused shafts of mines and the sides of old wells are sometimes resorted to. Occasionally it will build in the roof of a barn or shed, attaching its nest to the rafters; or in a garret or passage to which it finds easy access. In almost all cases it selects a point where some projection from the wall, 'some coign of vantage ground,' forms a buttress on which its nest may be supported. The nest is constructed principally of mud or soft earth, collected in small pellets from the edges of ponds and other wet places; these are carried home in the bird's bill, and plastered on to the spot selected for the nest; fresh pellets are then brought and added, together with numerous straws and leaves of grasses, until the whole is gradually moulded into the form of an open saucer, attached by one side to the wall of the chimney or other place of retreat. A lining of feathers is then put into the nest, and upon these the eggs are laid." Such of these nests as are well sheltered from the wind and rain are often employed for many years, and that, not merely by the original builders, but by successive generations; any little repairs required being made from time to time by the occupants.

The Chimney Swallow, though by no means a powerful or hardy bird, possesses such an amount of life and spirit as is seldom met with in any other members of the feathered race, and which no inclemencies of weather or scarcity of food can entirely quell. Its appearance is extremely trim, and its disposition so brisk and lively that it has ever been an especial favourite. Morning has scarcely dawned before it is on the alert, and occupied in twittering its summons to the rest of the world to be up and about their work. Its voice can boast no real music, but its notes are so sprightly, and so evidently the outpouring of the bird's own joyous sensations, as it turns its breast in all directions, flaps its wings, and indulges in a variety of animated gestures, that it cannot fail to please the hearer, and impart an additional charm to the beauties of the first hours of a bright early summer's day.

The flight of this species is peculiarly light and graceful, and very far superior to its movements upon the ground, over which it crawls with an awkward and helpless step, its little feet appearing quite unable to support its body, either when walking or perching. When upon the wing the powers of the Swallow are seen in their full perfection, and few objects are more beautiful than one of these birds, as it skims over the face of the country, now soaring upwards to a great height, and now sinking suddenly down until it almost sweeps the ground; then changing its course, it flies backwards and forwards with amazing celerity, pursuing its way with untiring speed, and not unfrequently indulging in a bathe in the lake or stream over the bosom of which it delights to skim. This proceeding, like all its other evolutions on the wing, is rapidly and easily accomplished; the bird sinks close to the water, and suddenly darts beneath its surface, reappearing in less than a moment, and then flies off to a distance to shake the moisture from its plumage. The Swallow devours enormous numbers of flies, beetles, and butterflies; when in pursuit of prey it either keeps near the ground, or skims through the air at an altitude regulated according to the barometrical state of the atmosphere, insomuch that from this fact has arisen the popular idea that its movements indicate the kind of weather to be expected.

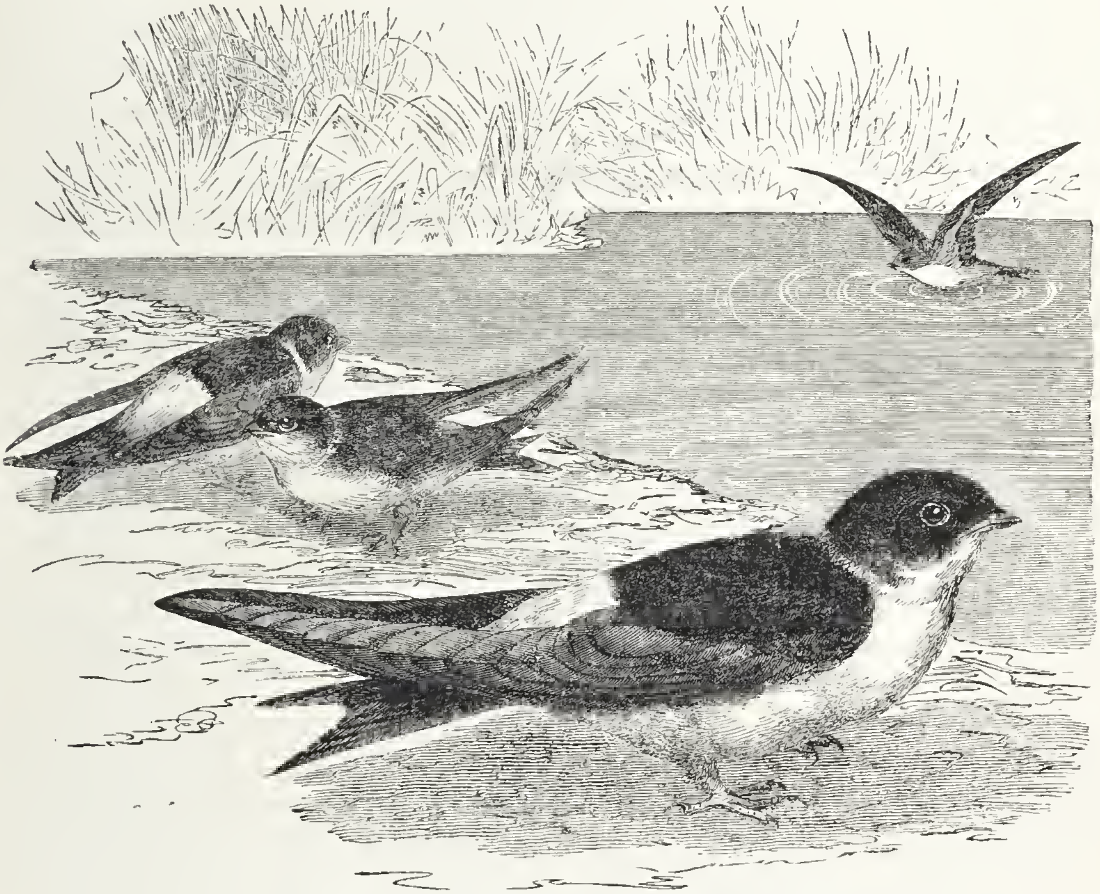
The eggs (see Fig. 35, Coloured Plate X.), from four to six in number, are laid about May, and are incubated entirely by the female. If the season is fine the male ministers to her wants, and the young are hatched in twelve days; but should the weather be cold or wet the unfortunate mother is expected to provide for herself, and must therefore leave her nest; if this is the case the nestlings do not quit the shell for about seventeen days. The young grow rapidly, and before they are fully fledged may be often seen peering and gaping above the sides of the nest, until able to accompany their parents during their daily excursions; yet, even then, they return to the nest for a short period as evening closes in. No sooner has the first family become self-supporting than the female again lays, but this time the eggs are fewer than before, and it is not uncommon for this second brood to be hatched so late in the season that the nestlings are too weak to accompany the rest of the family when the time for migrating arrives. A Spanish proverb says, "He who could destroy a Swallow could kill his own mother;" but, in spite of the reprobation of the act expressed in this popular adage, hundreds and thousands of these useful and sprightly birds are annually slaughtered out of mere wanton mischief, not only in that country, but in all parts of Europe, and yet few members of the feathered creation are more innocent, more useful, or more ornamental to the landscape. "The Swallow," says Sir Humphry Davy, "is one of my favourite birds, and a rival of the Nightingale, for he cheers my sense of seeing as much as the other does my sense of hearing. He is the glad prophet of the year, the harbinger of the best season; he lives a life of enjoyment, among the loveliest forms of Nature. Winter is unknown to him, and he leaves the green meadows of England in autumn, for the myrtle and orange groves of Italy, and for the palms of Africa. He has always objects of pursuit, and his success is secure. Even the beings selected for his prey are poetical, beautiful, and transient. The ephemeræ are saved by his means from a slow and lingering death in the evening, and killed in a moment when they have known nothing but pleasure. He is the constant destroyer of insects, the friend of man, and a sacred bird. His instinct, which gives him his appointed season, and teaches him when and where to move, may be regarded as flowing from a Divine source; and he belongs to the oracles of Nature, which speak the awful and intelligible fiats of a present Deity."

The power of flight possessed by these birds is truly wonderful, and the distance to which they can travel through the air, without the possibility of rest, is almost incredible. Nevertheless, at one time, and that not many years ago, it was believed that on the approach of cold weather Swallows plunged to the bottom of some pond, in the mud of which they passed the winter, and revived again in spring. So long ago as the year 1849 this subject was brought before the Academy of Sciences at Stockholm, and the following document, which, coming from the quarter it did, was by some looked upon as an irrefragable proof of the truth of this strange story, was submitted to and gravely discussed by that learned body:—"Near to the estate of Kafvelas, in the province of West Gothland, there is a little lake called Djpasjon, where on several occasions in the winter time, when the ice-net has been drawn, *stelnade*, or stiffened Swallows, have been brought up in my presence. My father, then Inspector at Kafvelas, who was also present, directed me to take some of them home, and place them in a chair at some little distance from the fire. This I did, and, to my great astonishment, I soon observed the birds to draw their heads from under their wings, where they had been previously placed, and in a few moments to fly about the room. But as this was not the proper season for their quickening, they lived but a short time afterwards."



THE THREAD-TAILED SWALLOW (*Cecropis-Uromitus-filifera*).

So often has this statement been repeated, that even Wilson felt himself called upon to confute it. "The Swallow," says that graphic writer, "flies in his usual way, at the rate of one mile in a minute, and he is so engaged for ten hours every day; his active life is extended on an average for ten years, which gives us two million one hundred and ninety thousand miles—upwards of eighty-seven times the circumference of the globe. And yet this little winged seraph, if I may so speak, who in a few days can pass from the Arctic regions to the torrid zone, is forced when winter approaches to descend to the bottom of lakes, rivers, and mill-ponds, to bury itself in the mud with eels and snapping turtles, or to creep ingloriously into a cavern, a rat-hole, or a hollow tree, with snakes, toads, and other reptiles, till the return of spring! Is not this true, ye wise men of Europe and America, who have published so many *credible* narratives upon this subject? The Geese, the Ducks, the Cat-bird, and even the Wren, which creeps about our houses like a mouse, are all declared to be migratory, and to pass to southern regions on the approach of winter. The Swallow alone, on whom Heaven has conferred superior powers of wing, must sink in torpidity to the bottom of some pond to pass the winter in the mud!"



THE MARTIN (*Chelidon urbica*).

We must confine our notice of the True Swallows to the mention of two other species, one remarkable for its size, and the other for the very peculiar formation of its tail.

THE SENEGAL SWALLOW.

The Senegal Swallow (*Cecropis Senegalensis*) is about eight inches long and fifteen broad; the wing measures five and a half, and the tail about four inches. The plumage of the upper part of the body is of a glossy blueish black, with the exception of the rump and a ring round the neck, which are reddish brown; the under side is entirely of the latter hue, somewhat paler upon the throat and upper part of the breast. This very large species inhabits Central Africa in great numbers, and is met with from the western coast to the shores of the Red Sea. In its mode of life and habits it so closely resembles the Chimney Swallow that a description of its habits would be mere repetition; unlike that bird, however, it does not always dwell in the immediate vicinity of man, but frequently wanders forth and lives upon the vast and barren steppes. Another very similar species is found in Angola and at the Cape of Good Hope.

THE THREAD-TAILED SWALLOW.

The Thread-tailed Swallow (*Cecropis-Uromitus-filifera*) is a small and delicate bird, easily recognisable by the long threads in which the two outer feathers of the tail terminate. The upper part of the body is of a beautiful metallic blue, the top of the head rust-red, the region of the cheeks black, the under side white, and the tail spotted with white. The length of this species is five, and its breadth eleven inches. The thread-like appendages are not so long in the tail of the female as in that of her mate. This singular bird principally frequents India and Central Africa, and we have met with it living solitarily or in pairs during our travels in Nubia. As far as we were able to ascertain, its habits exactly correspond with our account of its European congener. The Indians call this species "Leischra," as the threads attached to the tail are supposed to resemble the grass known by that name.

THE MARTIN.

The Martin or Roof Swallow (*Chelidon urbica*) we have selected as the type of a group, recognisable by their slightly forked tail and strong feet, the toes of which are connected from the first joint, and, like the tarsi, are thickly covered with feathers. This bird is five inches and a half long, and ten and three-quarters broad; the wing measures four inches, and the tail two and a half: Upon the back the plumage is almost entirely of an uniform blueish black; the under side and rump are white. The eye is dark brown, the beak black, and the bare parts of the foot black. Both sexes are alike in colour, but the plumage of the young is less clear in its tints than that of the adult. The Martin inhabits the whole of Europe, and penetrates further north than the Chimney Swallow; it is numerous in Siberia, and during its migrations visits the interior of Africa and Southern Asia. In most respects it closely resembles the species already described, but is somewhat less brisk and intelligent; its flight also is not so rapid and varied as that of the Chimney Swallow, but it frequently soars to an enormous height in pursuit of the insects upon which it subsists. Its voice is very far inferior to that of the rest of its family, and its cry monotonous and harsh.

In populous districts the nests of this bird are invariably constructed upon houses, but where human habitations are scarce, the Roof Swallow is content to make its preparations upon rocks, or any situation that will afford it a secure shelter from the wind and rain. The nest is very similar to that of the Chimney Swallow, but with this difference, that it is always built against a hole, and has no external entrance; sometimes many pairs construct their dwellings under the same eaves or the same rock, and thus form a kind of settlement. Although usually peaceful, during the breeding season disputes and battles are of constant occurrence; each couple naturally endeavouring to obtain the snuggest corner, and to oust its neighbour should the opportunity offer. The brood consists of from four to six delicate snow-white eggs, and the nestlings are hatched in about twelve days. The female alone broods, and is fed by her mate only when the weather is fine; the young also frequently have but an insufficient supply of food, owing to the difficulty of procuring insects when the season is inclement, and thus must very often be left behind when the flocks migrate, as they are still too weak to undergo such great fatigue. If all goes well, the nestlings are fully fledged in about sixteen days, but generally remain for some time longer under the care of their parents. During this period the whole family return at night to their nest, which they fill so completely that we have often been inclined to wonder that the walls did not give way under the pressure to which they were subjected. Desperate fights often ensue when a stray bird finds its way into a wrong nest, and most courageously do those in possession exert themselves to expel the intruder, who is generally equally determined to remain. Far less brave is the Swallow when brought into collision with its principal enemy, the Sparrow; it often happens that no sooner is the Swallow's nest completed than a male Sparrow creeps in and takes possession, keeping guard at the door, in order to prevent the entrance of the rightful owner; under these circumstances, the latter, not venturing to obtain admittance by force, usually summons its companions, who together beset the impudent intruder with loud cries and every demonstration of anger. In most cases the Sparrow retains possession of its ill-gotten abode, but should the Swallow be bold, a battle sometimes takes place that proves fatal to one or other of the combatants. So constant are these attempts of the Sparrow to obtain a home for its young, that a pair of Swallows sometimes are deprived *twice* in the season of the domicile they have laboriously completed, and, should this occur, do not breed at all that year. It was formerly imagined that the Swallow revenged itself on its foe by building it up in the nest, but we need hardly say that this is untrue.

The Martins make their appearance in England a few days after the Chimney Swallow (*Cecropis-Hirundo-rustica*), and on their arrival are usually seen in warm and low situations, such being most likely to supply an abundance of their natural food. They are equally distributed throughout the kingdom, and are found wherever man has fixed his residence, seeming to court his protection. They commence nidification early in May, and build in the upper angles of windows and under the eaves of houses, sometimes under the arches of bridges or against the face of rocks. The nest is formed of mud completely worked and cemented, and is closed all round except a small orifice, usually on the sheltered side, just of sufficient size to permit the passage of the inhabitant; the interior is well lined with a collection of straw, hay, and feathers. These birds leave us in October; preparatory to their departure, they congregate in great numbers on the roofs of houses.

The MOUNTAIN or SHORE SWALLOWS (*Cotyle*) are recognisable by their slightly forked tail, and lax, lustreless plumage. Two species are indigenous to Europe; a description of these will serve for the entire group.

THE ROCK SWALLOW.

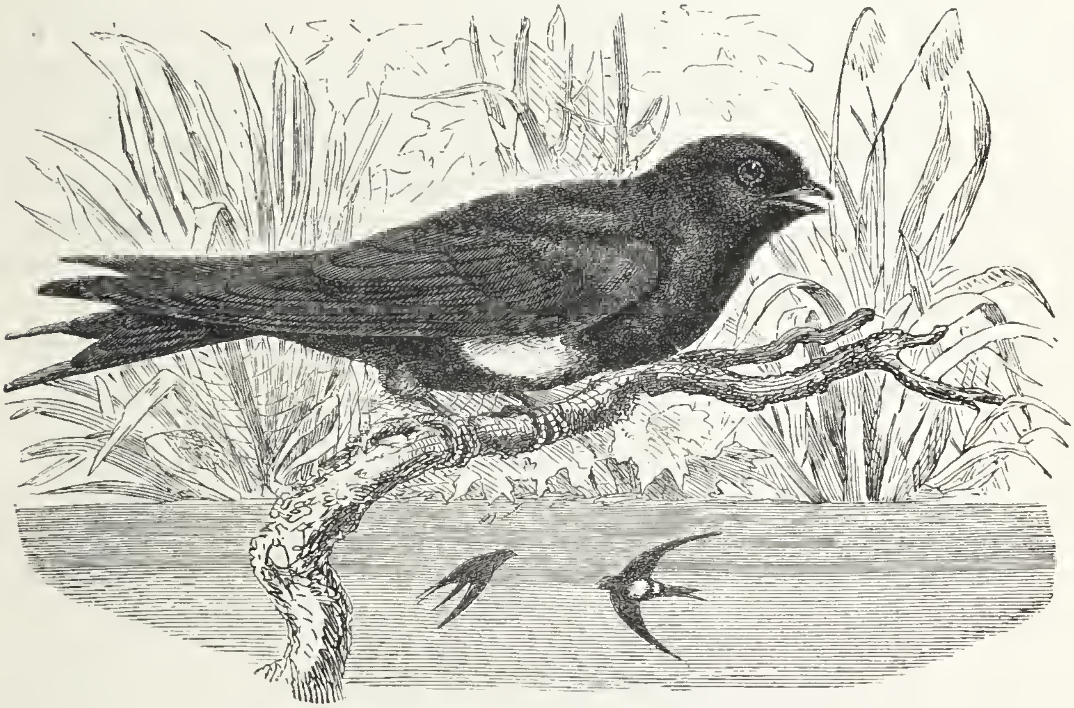
The Rock Swallow (*Cotyle rupestris*) is about five inches and a half long, and from twelve and a half to thirteen and three-quarters broad; the wing measures about five inches. The coloration of the plumage closely resembles that of the rocks upon which this species principally lives. The upper parts of the body are light brown, the quills and tail blackish; the centre feathers that compose the latter are beautifully marked with oval yellowish white spots; the throat is whitish; the breast and belly dirty reddish grey; the eye is dark brown, the beak black, and the foot reddish grey. The sexes are nearly alike; the young are somewhat more uniform in hue than the adult bird.

The actual habitat of the Rock Swallows appears to be Spain, Italy, and Greece, but they are constantly met with and are known to breed in the Tyrol, and even in still more central parts of Europe. So hardy are they that such as migrate do not leave till the autumn is far advanced, and return as early as February or March; whilst others, inhabiting the extreme south, remain in their native land throughout the entire year. In Egypt and South-western Asia they are replaced by a smaller but very similar species. The Rock Swallows seldom associate with their congeners, and are readily distinguished from them by their greyish hue, and comparatively slow and hovering flight. In Switzerland, after their return in the spring, they usually allow some time to elapse before they seek their own nests or build new ones; during the interval they busy themselves in making excursions in all directions, either skimming near the mountains, or, if the weather be fine, soaring to a considerable height in the air. If, on the contrary, the season be dull or rainy, they keep close to the earth, or beneath projecting rocks and stones. If the day be bright, they come down from their retreats among the mountains, and perch upon the roofs of cottages, but never venture actually into houses. The nest is placed beneath a projecting ledge of rock, or in some similar situation, and resembles that of the Chimney Swallow. Several pairs frequently build together, but we have never seen settlements like those formed by some other species. Many various statements have been made as to their mode of nidification, seeing that, owing to the precipitous nature of the localities selected, it is very often extremely difficult to approach the abode of a Rock Swallow. The eggs are white, spotted with red, and are from three to five in number. After the nestlings are fully fledged, they still remain for some time with the old birds, following them about in search of insects, which are caught on the wing, but as soon as a fly or a beetle is thus obtained, the hungry young perch for a moment upon a tree, and receive the morsel from the parent's beak. When the period of incubation is over, the different families form small parties, and wander about the country, as in the spring, until the proper time for commencing their migrations. In its general disposition, the Rock Swallow is less alert and brisk than its congeners, and its voice has a deeper and rather hoarse sound.

THE SAND MARTIN.

The Sand Martin (*Cotyle riparia*), one of the smallest members of its family, is only five inches long and eleven broad; the wing measures four, and the tail two inches. The plumage is greyish brown above, white beneath, and marked on the breast with a greyish brown ring. The sexes are nearly alike, but the young are darker than the adults. These birds inhabit and breed in all parts of Europe, except the extreme northern countries, and usually frequent such rocks or hills as overhang streams and rivers. The wonderful nests that have rendered the members of this group so famous, are made either in natural hollows, or in holes excavated with enormous labour by the builders; they appear, however, to prefer the cavities which they have themselves prepared, and are most careful to dig their retreats at such an elevation as to be above high-water mark. "It appears," says Naumann, "almost incredible that a pair of these small birds, with no other instruments than their delicate beaks, can dig, as they do, a horizontal passage several inches in diameter, and from three to six feet deep, in the space of two, or sometimes three days. The male and female both assist in this, for them, gigantic undertaking, and work with the utmost energy and ardour, disposing of the loose earth by throwing it out behind them with their feet; and yet, strange to say, it is not uncommon for them suddenly to leave one of these excavations when almost finished, and commence another; occasionally, they will even dig a third. Why they do this has never been satisfactorily ascertained, for it is only the passage to the chamber in which the nest is made that is ever occupied either by the parents or the young family. Many pairs invariably work close together, thus forming an extensive settlement, and it is most amusing to watch the earth flying out of a number of their holes as it is ejected by the busy labourers, who are usually quite out of sight." It is to these settlements that Pliny alludes in the following amusing terms: "At the Heracleotic mouth of the Nile in Egypt, the Swallows present an insuperable obstacle to the inroads of that river, by the embankment formed by their nests in one continuous line, nearly a stadium in length—a thing that could not possibly have been effected by the agency of man. In Egypt, too, near the city of Coptos, there is an island sacred to Isis; in the early days of spring, the Swallows strengthen the angular corner of this island with chaff and straw, thus fortifying it in order that the river may not sweep it away. This work they persevere in for three days and nights together, with such unremitting labour that it is a well-known fact that many of them die in consequence of their exertions; moreover, this is a toil which recurs to them regularly every year."

The nest itself is made at the end of the above-mentioned passage, and consists of a bed of straw, hay, and fibres, snugly lined with wool, hair, and feathers. The eggs, five or six in number, are of an oval shape, and have a thin, pure white shell. The young are hatched in a fortnight, and remain for a similar period under the care of their parents. Should the first family not be reared, a second brood is at once laid. The flight of the Sand Martin is so light as to bear comparison with that of the butterfly. Its voice is weak and gentle, and its disposition lively and active; it is extremely social, and lives at peace with most other birds. In its general habits it resembles its congeners, but leaves for warmer climes earlier in the year than they do, and does not reappear till about May.



THE ARIEL (*Chelidon Ariel*).

THE ARIEL SWALLOW.

The Ariel Swallow, or Fairy Martin (*Chelidon Ariel*), as the Australian representative of our Roof Swallow is called, is about three inches and a half in length. The upper part of its body is deep blue, the top of the head rust-red, the rump brownish white, and the tail dark brown; the eye is blackish brown, the beak black, and the foot brownish grey. According to Gould, the Ariel appears in the southern and western portions of Australia about August, and, seeking after its old haunts, lays two or three broods, and departs again in February. In some situations the nests of this species are built crowded together under eaves of houses and hollow trees, or beneath the shelter of an overhanging rock; the male birds assist in the construction of the long flask-like passage by which the actual home for the young is entered, and fetch clay for the females while employed in building.

"Until my arrival in the colony of New South Wales," says Gould, "I had no idea of the existence of this new and beautiful Martin, nor, in fact, until I was awakened by its twittering notes at the bedroom window at the inn in Maitland did I discover that I was surrounded by hundreds of this species, which were breeding under the verandahs and corners of the windows, precisely after the manner of the Common Martin. Several of their bottle-shaped nests were built round the house, and from thence I obtained as many eggs as I desired. I observed this bird throughout the district of the Upper Hunter, as well as in every part of the interior, breeding in various localities, wherever suitable situations presented themselves, sometimes in the holes of low decayed trees, while not unfrequently clusters of nests were attached to the perpendicular banks of rivers, the sides of rocks, &c., always, however, in the vicinity of water. The nest, which is bottle-shaped, with a long neck, is composed of mud or clay, and, like that of our Common Martin, is only constructed in the morning and evening, unless the day be wet or lowering. While building these nests they appear to work in small companies, six or seven assisting in the formation of each, one of them remaining within and receiving the mud brought by the others in their mouths. In shape the nests are nearly round, but vary in size from four to six inches in diameter, the spouts being eight, nine, or ten inches in length; when built on the sides of rocks or in the hollows of trees, they are placed without any regular order in clusters of thirty or forty together, some with their spouts inclining downwards, others at right angles, &c.; they are lined with feathers and fine grasses." The eggs, which are four or five in number, are sometimes quite white, or spotted or blotched with red; they are eleven-sixteenths of an inch long, by half an inch broad.

The WOOD SWALLOWS (*Atticora*) are delicate birds with long wings (in which the first and second quills are of equal length), forked tails, thin beaks, and slender legs, furnished with short toes; the plumage gleams with metallic lustre, and is much varied in its hues. All the species included in this group inhabit South America and Africa; they frequent woods and forests, and build their nests in the trunks of hollow trees.

THE STRIPED WOOD SWALLOW.

The STRIPED WOOD SWALLOW (*Atticora fasciata*) is a native of Brazil. Its plumage is black, marked with white upon the breast and under part of the thigh; the rump has a blueish gloss. The length of the body is six inches, the wing measures four, and the tail three inches. This active, lively bird frequents the forests of Northern Brazil, from whence it flies, in search of its insect fare, over the neighbouring streams and rivers, and perches or sleeps amongst the surrounding trees.

We must not omit to mention the American SAILOR SWALLOWS (*Progne*), partly because they have frequently been seen in Europe, but more especially as they form the connecting link between the Swallows and the Swifts; they are powerful birds, with long, broad wings, extending beyond the very decidedly forked tail. Their beak is strong, broad at the base, compressed at its sides, much arched, and terminates in a hook; the legs are robust, the tarsi bare, and the toes thicker and more fleshy than those of other Swallows. The plumage is very dense.

THE PURPLE SWALLOW.

The PURPLE SWALLOW (*Progne purpurea*) is seven inches and a half long and fifteen and a half broad; the wing measures about five, and the tail two and a half inches; the centre feather of the latter does not exceed two inches. The female is a trifle smaller and more slender than her mate. The plumage is of a deep blackish blue, shaded with purple; the quills and tail-feathers are blackish brown; the eye dark brown, the beak blackish brown, and the foot purplish black. The head of the female is brownish grey, spotted with black; the upper part of the body is greyer in tint than that of the male, and streaked with black.

This bird is a particular favourite with the Americans, and has been described at great length by many writers. According to Audubon, the Purple Swallows appear in New Orleans about February, and at once come sweeping about the towns or over the streams and rivers. Near the Falls of the Ohio, they are not seen till March, and in Missouri not before the middle of April. In August they leave for more southern countries, assembling like their European brethren upon steeples or high trees, preparatory to starting upon their travels. The flight of this species resembles that of the Roof Swallow, but upon the earth and among the branches of trees its movements are far more easy, and it frequently alights to seek for insects on the ground. Whilst upon the wing, it often bathes and drinks in the same manner as our English Swallows, and like them seizes its prey as it darts through the air. Its disposition is bold and courageous, insomuch that it will frequently chase cats, dogs, Falcons, Cranes, or even Vultures, with great intrepidity.

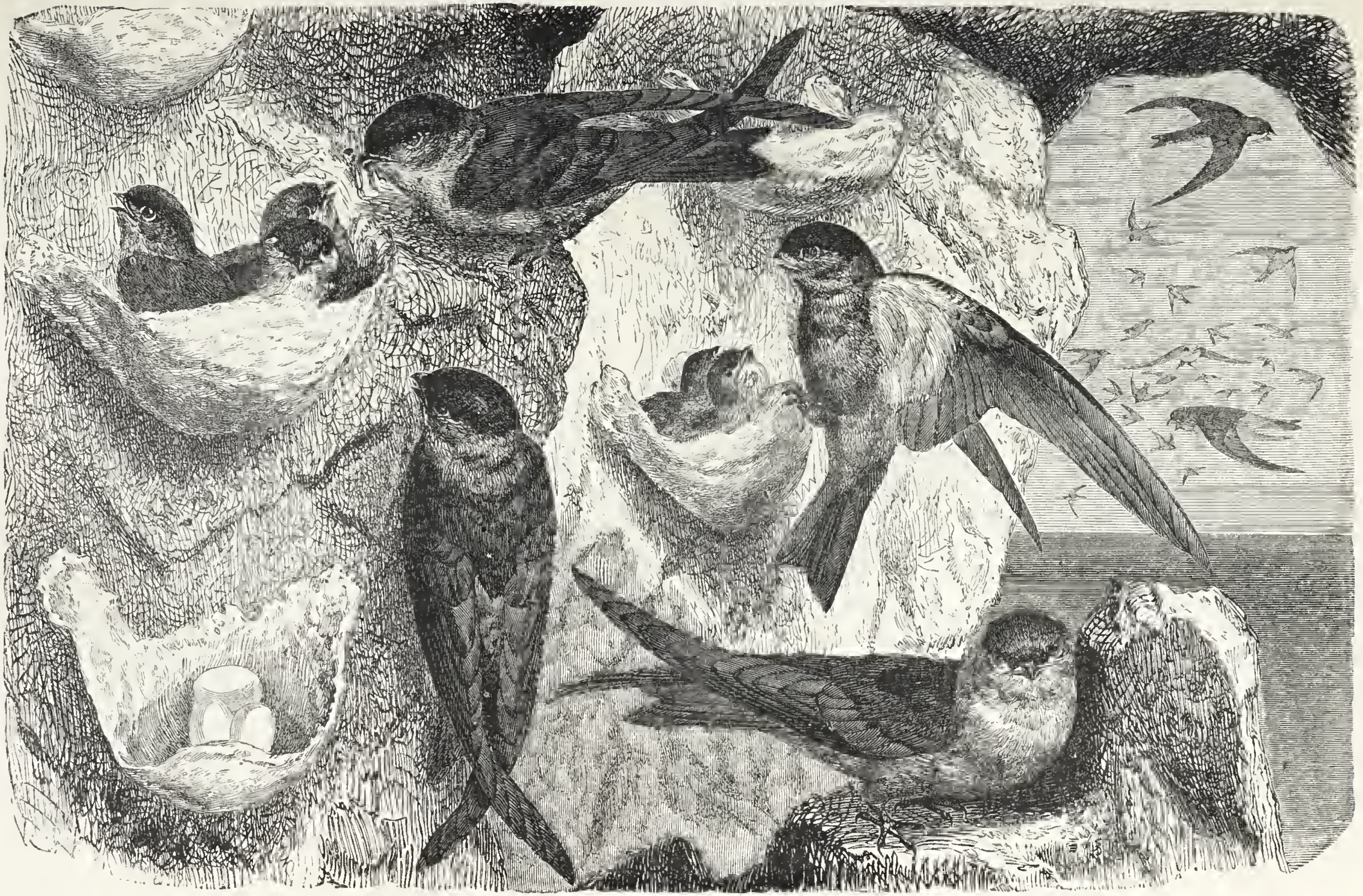
The nest of the Purple Swallow, which is long and flask-shaped, is formed of dry twigs, grass, leaves, feathers, and other elastic materials, and is either built against a tree or placed in similar situations to those selected by its congeners. The female produces two and sometimes three broods, and lays from four to six purely white eggs; the first family is fully fledged by May, and the second about July. Both parents assist in the work of incubation; the male proves himself a most tender and devoted spouse, and often spends whole hours at the side of his mate, singing to her with great vivacity. Should several pairs brood near the same spot, the utmost harmony prevails among them.

Pursuant to our intention of laying a *natural* classification of the Animal Kingdom before our readers, we shall now proceed to describe the SWIFTS, although we are well aware that many modern naturalists consider that they should not be grouped with the Swallows.

The family of the SWIFTS (*Cypseli*) are small or moderate-sized birds, with a long slender body, short neck, broad flat head, and small delicate beak, which is broad at its base, slightly curved, and somewhat compressed at its tip. The gape is uncommonly wide; the wings are narrow and curved like a sabre; the tail is very variously formed, being sometimes long, sometimes short, and more or less deeply incised at its extremity; the feet and toes are stunted, the latter armed with short, powerful, and much curved claws. The plumage is thick and composed of small feathers, it is usually of a dusky hue, but occasionally exhibits considerable metallic lustre. The various members of this family are found throughout all the divisions of our earth, except its most northern portions, and inhabit every situation from the sea-coast to the snow boundary of lofty mountain ranges. From early morning till late in the evening, they may be seen skimming through the air with astonishing rapidity, or soaring to such an elevation as to be almost beyond the reach of our vision. So powerful are their wings that no amount of exertion appears to fatigue them; their pinions, which when extended form a crescent, are wielded with a force and rapidity rivalling the activity of the Humming Birds—they dart with the velocity of an arrow upon their prey, or indulge in every conceivable variety of flight or motion, as they skim through what may certainly be called their native element; even when among the branches of trees, they display considerable agility, but are perfectly helpless upon the ground. All the members of this family are of a restless disposition; they spend but a few hours of the night in repose, and require a very large amount of food to enable them to support their prolonged exertions, so that they consume insects in enormous quantities, seizing them whilst upon the wing.

All such species as inhabit the temperate zone migrate with the utmost regularity as winter approaches, and return to their native haunts with such unfailing precision that the day on which they will re-appear may be accurately prognosticated. Those species inhabiting the interior of Africa never actually migrate, but occupy themselves in flying over the face of the country during the wet season. The work of constructing the nest is commenced as soon as the winter journeyings are over, and is always carried on amidst great excitement; the males chasing and fighting each other most furiously during the whole time, and constantly engaging in pitched battles with the birds whose nests they prefer taking rather than undergo the labour of constructing a home for themselves. Unlike the nests of the Swallows, those built by the Swifts seldom consist of more than a few slight materials laid carelessly together, and cemented with saliva from the builder's beak. The eggs are round and white; the female alone broods, but both parents share in the toil of satisfying their hungry progeny.

THE KLECHO (*Dendrochelidon klecho*).



Salanganes

The TREE SWIFTS (*Dendrochelidon*) constitute a group whose various species form a link between the Swallows and the Swifts Proper. These birds are recognisable by their elongate body, long wings, in which the two first quills are of equal length, their long, deeply-forked tail, and the crest with which their head is adorned: their feet resemble those of the Swallow.

THE KLECHO.

The KLECHO (*Dendrochelidon klecho*), so called from the sound of its cry, is about seven inches long; the wing measures six, and the tail three inches. Upon the upper part of the body the plumage is of a brilliant metallic steel-green; the wing-covers have a blueish lustre; the quills are blackish on the inner and blue on the outer web, and the shoulder-feathers white. The belly is white, the rest of the under surface and rump of a beautiful deep grey. The male has a reddish brown and the female a black spot near the eye.

The Tree Swifts differ almost entirely in their mode of life from any other members of their family. Extensive woods and dense forests are their favourite resorts, such being preferred as are in lowland districts; according to Jerdon, the Indian Klecho constantly builds in these localities, flying from thence over the streams or lakes in the vicinity in search of insects on which it subsists. Whilst resting from its labours it usually selects a withered tree for its perch, and amuses itself by expanding and playing with the beautiful crest upon its head. Its flight is excellent, but it climbs awkwardly among the branches. When upon the wing it utters almost incessantly a loud parrot-like scream; when perched its voice is not quite so harsh. We learn from Bernstein that, unlike all other Swifts, the Klecho usually builds at the summit of a tree, upon a branch of about an inch in thickness. Its strange nest, the walls of which are scarcely thicker than parchment, is constructed of bits of bark, feathers, and other similar materials, woven together, and cemented with saliva. The great peculiarity of the nest consists in the fact that it is only just big enough to contain the one large egg laid by the female, and that the walls are far too delicate to bear the weight of the brooding mother; the bird is, therefore, compelled to perch and support herself upon the branch, and merely allow her breast to cover and warm her offspring. The female lays twice in the season; the egg is perfectly oval and of a blueish tint.

The SALANGANES (*Collocalia*) are a group of Swifts whose edible nests have been famous from time immemorial, but as to whose life and habits little information has been acquired. These birds are distinguished by their small size, long wings, in which the second quill exceeds the rest in length, their forked or slightly incised tail, small but powerful beak, and delicate feet, the exterior toe of which is directed backwards. In all the members of this group the salivary glands are much developed.

THE SALANGANE PROPER.

The SALANGANE PROPER (*Collocalia nidifica*), as we will call the species most extensively met with, is from four to five inches long, and twelve inches broad. Its wing measures about four inches and a half, and its tail two and a quarter. The plumage is of a greyish brown, paler upon the under surface; the quills and tail are blackish, and the vicinity of the eyes marked with white. The feathers of the adult have a slight metallic lustre that is not perceptible in the young. It was formerly supposed that these remarkable birds were only found upon the Sunda Islands, but modern observation has proved that they also inhabit the mountains of Assam, the Neilgherries, Sikkim, and Ceylon. Most contradictory tales have been told by travellers as to the materials of which their famous edible nests are composed.

The earliest account of these nests is met with in Bontius, who tells us that "Large flocks of very small birds of the Swallow kind come down during the breeding season, and settle upon the Chinese coasts, where they swarm over the cliffs that overhang the sea. In these situations they build their strange nests, forming them of fish spawn, which they collect from the shore. These nests are much valued by the natives, who will often pay very large sums of money for them, in order to make them into soup, which is considered a dainty." More modern investigators have been equally inaccurate in their surmises, some pronouncing them to be constructed of the flesh of a kind of snail or worm, or a peculiar species of sea-weed, gathered from the shore. Recent observations upon this interesting point have, however, proved that all these explanations are incorrect, and we learn that these luxuries, in which the Chinese so much delight, are formed of a secretion resembling saliva, drawn from under the bird's own tongue. After a great variety of experiments as to its component parts, Marsden pronounces that the material resembles a mixture of gelatine and white of egg, an opinion in which Bernstein, who is a trustworthy authority on this disputed question, entirely coincides; we will, however, describe the nest of the Salangane before we give our readers the real secret of its construction, as vouched for and described by the last-mentioned naturalist. The Salangane usually builds in such deep and dark cavities that the observation of its proceedings as it fastens its small, thin, gelatinous nest to the rock, is attended with great difficulty. This structure is in shape like the quarter of an egg-shell, divided longitudinally along its entire length. Some of these nests are white, some of a brown colour, and opinion differs considerably as to the reason of this variety; we ourselves believe it to depend on the age of the structure, as we have never seen a brown nest occupied, but other authorities pronounce them to be the work of two distinct species. In the markets the white nests command a very high price, while such as are dark are but little esteemed. The two white eggs laid by the Salangane are deposited at the bottom of this remarkable gelatinous receptacle, without any further preparation for their warmth or comfort.

THE KUSAPPI.

The abode of the Kusappi (*Collocalia fuciphaga*) is much more easy of access than that of its congener above described, as it is either placed at the bottom of a hole, or affixed to the naked rock. In shape it resembles that of the Salangane, but its walls are partially composed of stalks of plants, horse-hair, and blades of grass, not woven, but cemented together with the aforesaid gelatinous secretion, by which it is also attached to the surface of the cliff. The amount of the mucilaginous substance used varies considerably, some nests being in great measure composed of it, whilst such as are formed of very pliable extraneous materials are made to a certain extent without its aid. Bernstein gives the following account of the process of building the nests of the Kusappi, and has proved the accuracy of his statements by numberless experiments, having even drawn the slimy thread himself from the bird's beak. "Shortly before the breeding season," says Bernstein, "the glands beneath the tongue of these birds become unusually distended, and present the appearance of two large swellings, which diminish considerably in size after the nest is completed. When about to make the foundation of its future abode, the Kusappi presses its tongue against the rock that is to serve for a support, and then, retiring a few paces, draws out a long gummy thread, which dries with great rapidity; this process is repeated, until a crescent-shaped mass is formed, and firmly fastened to the stone. The bird then takes the blades of grass, or stalks of other plants, one after another, from a heap it has already prepared, and cements them together by a similar operation, producing, as it turns its head from side to side, in order to draw out its thread, the undulating lines so frequently seen upon these remarkable structures, and this process is continued until the nest has assumed the necessary dimensions." The Salangane's method of proceeding is essentially similar to that adopted by the Kusappi, but, as we have already said, it builds entirely with the gelatinous threads, without any foreign admixture. We have frequently remarked that such of these birds as are well fed exhibit a much more considerable enlargement of the glands than is observable in those that have only been able to obtain a scanty supply of nourishment. This fact explains the reason why so much difference is constantly noticeable both in the size and beauty of these much-prized nests, millions of which are annually consumed, such as are very clear and delicate often realising fabulous prices. Java is particularly rich in this article of commerce, and Epp thus describes one of the localities in which the nests are most numerously met with:—"The Karang Kallong," he says, "is a huge chalk rock, rising perpendicularly from the sea, by which it is surrounded, and is garrisoned with a force of twenty-five men, whose sole duty is to protect the birds while building. A large tree grows at the edge of the steep, and from this point of view those who venture to look down behold the busy workers swarming beneath, appearing in the distance no larger than bees. The sides of the precipice contain nine caverns, each of which has its name, and can only be entered by a man lowered from above; should the rope break, his death is inevitable, and even if this danger be escaped, the task of finding the entrance to the cavern is attended with great peril, as the foaming waves constantly dash high enough to conceal it from view. The natives who engage in this

THE WHITE-THROATED PRICKLY-TAILED SWIFT (*Acanthylis caudacuta*).

terrible undertaking fortify themselves for their task by a dose of opium, and offer up a prayer to the Goddess Njaikidul before making the descent." In 1847 no fewer than 2,700 people inhabited the summit of the Karang Kallong, and of these 1,500 men were thus employed. Enormous numbers of nests are exported annually from this place to China, and are sold at very high prices; but those who thus risk their lives to obtain the expensive luxury are but poorly remunerated. We are but little acquainted with the habits of these birds, except that they fly with great rapidity, and constantly frequent the sea-shore.

THE STEEPLE SWIFT (*Cypselus apus*).

The PRICKLY-TAILED SWIFTS (*Acanthylis*) are distinguished from other members of their family by the very peculiar construction of their tail-feathers, the shafts of which extend beyond the web; the plumage is also thicker, and the tarsi longer and more powerful than in most other species.

THE WHITE-THROATED PRICKLY-TAILED SWIFT.

The White-throated Prickly-tailed Swift (*Acanthylis caudacuta*) is about eight inches and a half long, and twenty broad; the wing measures eight and the tail two inches. The head, upper tail-covers, sides of the wings, quills, and tail are pale black, with a metallic greenish blue gloss; the back and shoulder-feathers are whitish brown, the breast and nape white. The under side is blackish brown, the lower wing-covers and a streak on the side of the head are white, more or less intermixed with glossy, blackish blue feathers. The inner web of the secondary quills is also white; the beak is black, the foot lead-colour, and the eye deep brown.

We learn from Jerdon that this species is found in the south-eastern provinces of the Himalaya, Nepaul, Sikkim, and Bhotan, and that its flight is extraordinarily light and rapid. The breeding settlements are generally at a considerable height in the mountains, but always below the snow boundary. The strange prickly tail appears to be employed to assist the bird while climbing. Further particulars as to its habits and mode of life are entirely wanting.

THE DWARF SWIFT.

The Dwarf Swift (*Cypselus parvus*) is a small species found in some parts of Central Africa, where it usually frequents the forests or woodland districts. Its length does not exceed five inches and a half, and its breadth is eleven inches. The plumage is almost entirely dark grey, lightest upon the throat; the wings are of a brownish hue. In its general habits the Dwarf Swift resembles its congeners, but the structure of its nest is so remarkable as to merit a minute description. Brehm tells us that upon one occasion, whilst travelling in the vicinity of the Blue River, he was attracted by cries uttered by one of these birds as it flew backwards and forwards near a lofty palm whose branches towered above the surrounding trees. On going nearer the spot, he observed that the Swift kept disappearing, as it were, within one of the large, fan-like leaves, against the glossy green of which several white objects were distinctly visible. Thinking this circumstance somewhat extraordinary, he climbed the tree, and found, to his no small astonishment, that the said green leaf was the nest, and the white objects, the eggs, of the noisy bird. We should, perhaps, be more accurate if we said that the leaf formed the outer part of the nest, the actual chamber for the young being composed of cotton wool and feathers, fastened together with saliva, and in shape resembling a round spoon; the interior did not exceed two inches and a half in diameter." Guided by a most wonderful instinct, this little builder seems perfectly aware of the danger to which its aerial abode is exposed from a strong wind, and takes the very safe precaution of gumming with her tenacious spittle not only the nest and eggs, but the nestlings also, firmly to the leaf. Another peculiarity in the domestic arrangements of this species is that the two white eggs that compose a brood are fastened end upwards, in the very limited bed prepared for their reception.

THE PALM-TREE SWIFT.

The Palm-tree Swift (*Cypselus palmarum*) constructs its nest in a very similar manner to the Dwarf Swift.

THE STEEPLE SWIFT.

The Steeple Swift (*Cypselus apus*) is from six to seven inches long and fifteen and a half broad; its wing measures six and a half, and tail three inches. Its plumage is of a blackish brown, with the exception of the throat, which is white; the eyes are brown, the beak and feet black.

The Steeple Swifts are met with throughout the southern countries of Europe, in Central Asia, and over the entire continent of Africa. They appear in Europe with the utmost regularity on the first or second of May, and usually leave about the first of August. Such of them as are seen after that period find their way to us from more northern countries, having been left behind by their companions. The migrations of these birds are undertaken in large flocks and are usually commenced at midnight. Like all its congeners, the Steeple Swift is extremely restless, active, and lively in disposition, but differs considerably in its habits from all other members of its family. The air is its home, and almost its entire life is passed upon the wing. From early morning it may be seen, either sailing through the sky at a considerable height, or skimming along in its tortuous course as it pursues its insect prey. In general, however, it is only towards evening, or if the sky be wet or cloudy, that it approaches the surface of the earth. Such of these birds as inhabit the Canary Islands are an exception to this rule, for, according to Bolle, they invariably seek the shelter of their holes for a couple of hours during the forenoon. So extremely awkward are the movements of this species when upon the ground, that it is commonly supposed to be unable to rise if it should chance to alight on *terra firma*. This idea is, however, incorrect, for with the aid of its wings it is enabled to make a violent spring, and thus recommence its flight. The feet of the Swift are almost useless for walking; they are, however, invaluable assistants to the bird when climbing, and the sharp claws with which they are armed are most formidable weapons of defence against its adversaries. The sight and hearing of the Steeple Swifts is excellent, but in every other respect they are far below their congeners, with whom they live in a constant state of warfare; even towards their own species they exhibit the same violent and revengeful disposition, falling upon and clawing each other with such violence as often to tear the flesh from their opponent's breast. We ourselves have seen the males become so excited in these encounters, as to permit us to approach and seize them with our hands, and Naumann mentions having observed one of these birds dart like a Falcon upon a Sparrow quietly picking up worms in a field, and attack it with such fierceness that the terrified little creature sought refuge between the feet of a man who was standing near the spot.

Steeples, lofty edifices, and in some countries rocks, are the situations preferred by this species when about to build. The nest is constructed of hay, dry leaves, blades of grass, or even bits of rag, cemented into a solid mass by the saliva from the builder's beak. The two or at most three eggs that constitute a brood are white, elongate, and of the same breadth at both ends. The female begins to lay at the end of May; she alone performs the work of incubation, and is fed by her mate if the weather be fine; should it, however, be wet, she is compelled to leave her little family, and go herself in pursuit of insects, as the male can only provide for his own requirements. The young grow very slowly and remain for many weeks under parental care, indeed, they are rarely fully fledged until the end of August. It is by no means uncommon for these birds to avoid all the trouble attendant on nidification, by setting upon and worrying a Starling or Sparrow until they have compelled it to resign its little domicile; under these circumstances, if the eggs of the late occupier have been already laid, the marauder simply covers them with a layer of some elastic material, and on this the female deposits her brood. These Swifts subsist almost entirely on insects, and usually require a large supply of food; they can, however, occasionally fast for a lengthened period.

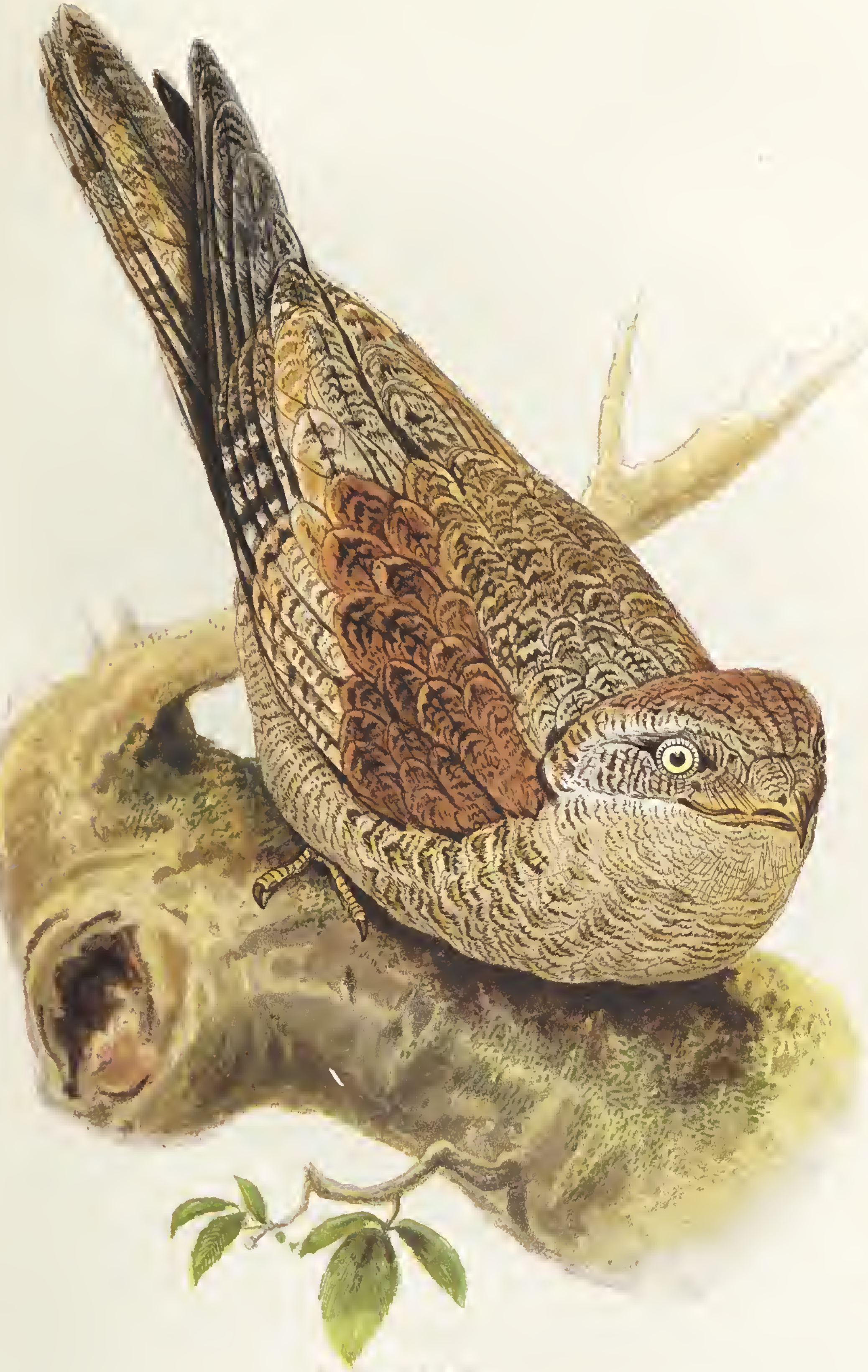
THE ALPINE SWIFT.

The ALPINE SWIFT (*Cypselus Melba*) is considerably larger and more powerful than the bird last described, its length being about eight, and its breadth from nineteen to twenty inches; the wing measures eight and the tail three inches. The plumage of this species is dusky greyish brown above, and white upon the throat and belly; the rings around the eyes are deep brown, and the feet and beak black. The young are recognisable by the light edge upon their feathers.

All the mountains of Southern Europe, and a large part of Asia, afford a home to the Alpine Swift; it is, however, rarely met with in the central or northern parts of the European continent. According to Jerdon, it is by no means uncommon in India, around the Ghauts, and Neilgherries, and on the Malabar coast; it is also sometimes seen near Madras; and all parts of Africa are visited by these birds during the course of their migrations. Although the favourite resorts of this species are in the mountains in Switzerland, it constantly frequents the steeples of the churches, appearing in that country about the end of March, and only leaving for warmer regions in October. We have been informed by the monks upon Montserrat that the Alpine Swift has been seen from time to time near their cloisters throughout the entire winter. In most particulars of its life and habits this bird closely resembles the Steeple Swift, but it is capable of mounting to even a still greater height in the air. Its voice resembles that of the Kestrel. Like its congeners it is eminently social, and generally flies about in considerable flocks; we have seen thousands at a time swarming around the summit of Montserrat, and Jerdon tells us that they congregate in similar multitudes on the heights of some Indian mountains. Their nests are built in holes of rocks, steeples, or similar situations; they are formed externally of twigs, upon which are laid leaves, straw, rags, paper cuttings, or other materials of like description, the whole being consolidated by means of the glutinous spittle to which we have so frequently alluded. The three elongated white eggs that form the brood are laid at the end of May; the nestlings are hatched by the middle of June, and are fully fledged by the last week in July.

The NIGHT JARS or GOATSUCKERS (*Caprimulgi*) constitute a family of very remarkable birds, in some respects resembling the Swallows and Swifts, but differing from them in many important particulars. Some species fully equal the Raven in size, whilst others, on the contrary, are not larger than a Lark; in all, the body is elongate, the neck short, the head large, broad, and flat, the eye prominent. The beak is broad, short, and tapers towards its tip, which is much compressed; the jaws are unusually large, and the gape wide; the legs are weak, the tarsi short and covered with horny plates, the upper part being occasionally feathered, or quite bare. The toes vary considerably in different species, but are usually weak and short, the centre one only being well developed; this middle toe is sometimes furnished with a large serrated claw. The wings are long and pointed, but not to such a degree as those of the Swallow, the second and third quills, instead of the first, generally exceeding the rest in length. The tail is formed of ten feathers, and differs considerably as to its shape; the plumage, like that of the Owl, is soft, and composed of large feathers; it is usually dark in colour, but much variegated and very delicately marked. The base of the beak is covered with a very remarkable growth of stiff bristles, and the eyes are surrounded with short but thick lashes. In some species the males have long and peculiarly formed feathers in the region of the tail and on the wings.

The Night Jars, or Fern Owls, as they are sometimes called, are found throughout all divisions of our globe, with the exception of its most northern latitudes; two species are met with in Europe, and others occur in America, Africa, and Asia. Though thus spread over the face of the earth, the actual habitat of this group is somewhat limited; certain amongst them occupy mountains, others frequent desert tracts or fruitful plains, but all keep to a certain extent within the limits of their appointed domain, their plumage being usually coloured so as to harmonise and blend with the tints of the rocks, sand, or tree trunks, among which they pass the greatest portion of their lives. Such of these birds as dwell in tropical forests do not migrate; and the greater number skim over the surrounding country at certain seasons; but all those inhabiting northern latitudes withdraw in the autumn towards the south. It is only during these migratory excursions—which often extend as



THE TAWNY GOATSUCKER — [illegible]

(two thirds Nat. size)

far as the interior of Africa—that the Night Jars exhibit anything like a social disposition; in their native haunts each pair keeps entirely apart from others, and never allows the slightest intrusion within the precincts of the locality selected for its abode. It may occasionally happen that some tempting neighbourhood will induce several couples to settle comparatively near together, but under any circumstances the same utter want of intercourse among them is observable. Towards man they by no means exhibit this want of sociability, and in most parts of the earth more or less frequent the immediate vicinity of his dwellings. Almost all these birds seek for insects—upon which they principally subsist—during the night, and retire to sleep within their favourite recesses as soon as morning dawns; but some American species are an exception to this rule, as they fly about in quest of prey not only in the daylight, but even when exposed to the full glare of the sun. Upon the ground they may be said to recline, rather than to perch or sit, and their gait, when attempting to take a few steps over its surface, is remarkably clumsy; their powers of flight, however, make ample amends for this deficiency, combining the facility and swiftness with which we are familiar in the movements of the Falcon and the Swallow.

The sight of the Night Jars is very keen, their hearing tolerably well developed, and their temperament by no means so sluggish as those who only see them drowsily perched among the branches during the day are usually inclined to suppose. They make no nest, and are content to deposit their eggs upon the naked ground, without even such scant preparation as the hollowing out of a slight cavity in which they might be more securely placed. Audubon tells us that it is not uncommon for the female, when disturbed, to conceal an egg in her mouth, and hurry with it to a spot where she can brood upon it unobserved. The young (usually not more than one or two in number) are tended and provided for with great care. Despite the important services rendered by this family, its members are in most countries regarded with unaccountable disfavour. One idea prevalent among the peasantry in some parts of Europe is so absurd that we cannot refrain from mentioning it; we allude to the idea that some species of Night Jars employ their huge jaws in relieving the goats of their milk — a superstition from whence is derived their usual name of Goatsuckers, an appellation conferred upon them from the most remote antiquity.

THE NACUNDA.

The **Nacunda** (*Podager nacunda*) has obtained its name from the unusual size of its mouth, and may be regarded as the type of a South American group, distinguished by their powerful body, very broad head, strong beak, and thick plumage; their beak curves slightly downwards at its tip, and the mouth is surrounded by a growth of very stiff, short bristles; the nostrils are situated immediately above the upper mandibles. The wings, in which the second and third quills exceed the rest in length, are long and pointed; the short tail is composed of broad feathers and slightly rounded at its tip. The legs are powerful, the tarsi long and bare, the toes fleshy, and the nail of the middle toe serrated. The plumage of the Nacunda on the upper part of the body is blackish brown, marked with fine reddish yellow lines; the head is darker than the middle of the back, and the region of the shoulder indicated by large blackish brown spots. The tail-feathers exhibit six or eight dark lines, those of the male being edged with white. The throat, cheek-stripes, and region of the ear are reddish yellow, and slightly spotted; the belly, legs, lower tail-covers, and a line which passes from ear to ear around the throat are of a pure white; the breast is marked with undulating lines. The very large eyes are light brown; the beak greyish brown, tipped with black; the feet flesh-red, shaded with brownish grey. According to the Prince von Wied, this species is about ten inches long and twenty-seven broad; the wing measures eight inches and a quarter, and the tail two inches and two-thirds. These birds are principally found upon the vast savannahs of

South America, where they usually frequent such parts as are covered with brushwood; they are also constantly seen around the Indian villages, and are called Chiangos by the natives. Unlike most of their congeners, they are very social and active, carrying on the pursuit of the insects upon which they subsist in broad daylight. The Prince von Wied assures us that he only once saw any great number of them together, and that was upon a large tract of land in the province of Bahia; they were flying fearlessly around the horses and cattle, apparently enjoying the intense heat of the sun, to which they were exposed. Schomburghk describes their flight as equalling that of the Falcon in swiftness, and the movements of their wings as resembling those of the Swallow. If disturbed, they endeavour to conceal themselves from observation among the low grass, and exhibit so much dexterity in evading pursuit, as to have given rise, among the Indians, to the strange fancy that the Nacundas possess two pairs of eyes. As night approaches, their melancholy cry is constantly to be heard, as they sweep in large parties around the trees, or over the fields, during their noisy and incessant pursuit of food. Burmeister found a Nacunda's egg in some long grass under a bush; it was almost cylindrical in form, the shell yellowish white, thickly marked with three shades of brown. Azara states that this species lays two eggs.

The TWILIGHT NIGHT JARS (*Chordeiles*) are recognisable by their slender body, short neck, and large head. Their wings, in which the second quill exceeds the rest in length, are long and pointed. The tail is short, formed of broad, powerful feathers, and more or less forked at its extremity; the legs are smooth, and the toes short; the centre toe being armed with a very decidedly hooked and serrated claw. Their plumage is thick, composed of small feathers, and is brighter in hue and more distinctly marked than that of most of their congeners.

THE NIGHT FALCON.

The NIGHT FALCON (*Chordeiles Virginianus*), a well-known member of this group, is an inhabitant of North and South America. Its length is about eight and a half, and its breadth from twenty to twenty-one inches; the wing measures seven inches and two-thirds. The upper part of the plumage is brownish black, spotted with white and pale brownish red. The secondary quills are dotted with brownish white, and the first five primaries have a broad stripe of white across their centre. The tail is striped with brown and grey, its four exterior feathers being tipped with white; the under side of the body is greyish white, marked with undulating brown lines; the throat is surrounded by a broad white line. The female resembles her mate, but the brown parts are darker, and the whitish spots redder, than in the plumage of the male. Her tail has no white spots at its extremity.

"The Night Falcons," says Audubon, "make their appearance in Louisiana about the first of April, during their migrations eastward, but never breed either in that State or in Mississippi. So rapid is their transit through these parts of the country, that the flocks have entirely disappeared within a few days of their arrival, whilst in the Southern States, on the contrary, they are often to be met with from the fifteenth of August till October. These wandering parties generally fly over the towns and villages, and settle from time to time upon the trees or houses, meanwhile uttering a harsh, shrill note, that cannot fail to attract the attention of all who hear it. We have seen them in Maine about June, and in the Central States somewhat earlier. These birds penetrate northwards as far as New Brunswick, but are rarely or never met with in Labrador or Newfoundland." The flight of the Night Falcons is light, animated, and capable of being long sustained, it is accompanied by loud, shrill cries, as the birds alternately soar above the summits of lofty mountains, or, rapidly sinking, continue their course close to the surface of the water. During such times as they are trying to attract the attention of the female part of the community, their evolutions become almost inconceivably fleet and agile; it is not uncommon to see one of them, after describing a series of the most elegant gyrations, come rushing down with such headlong velocity towards its intended partner, that it seems to render its death inevitable; but when within a few yards of the earth the bird dexterously spreads out its wings and tail, and again rises into the air, in order to recommence its sportive manœuvres. Audubon describes the spectacle of several males thus offering and exhibiting their admiration as being most amusing, and tells us that no sooner has the female made her choice, than the happy mate elect at once begins to harry and drive his rivals from the field.

The food of the Night Falcons consists principally of various kinds of small insects; they consume flies in enormous quantities, seeking their prey during the day, and sleeping at night upon trees or houses, from the tops of which their loud cries may be heard from time to time during the night. The breeding season commences at the end of May; the two eggs that form their brood have a grey shell, spotted with greenish brown or violet-grey (see Fig. 2, Coloured Plate IV.), and are deposited without any previous preparation upon the ground. The nestlings are at first covered with dark brown down, and are tended with great affection by their parents; the female especially exhibits unusual boldness and cunning in protecting or concealing her family from danger. When the young are strong enough to perch it is not uncommon for them to sit motionless beside the father and mother for hours, remaining so perfectly quiet and silent as to render it very difficult to discover their place of concealment. Large numbers of these useful birds are shot out of mere mischief. According to Audubon their flesh is excellent during the autumn, at which season they become well-flavoured and fat.

THE COMMON GOATSUCKER.

The European Night Jar or Common Goatsucker (*Caprimulgus Europæus*) represents a group of birds whose pursuit of food is carried on *exclusively* by night. All the various species of nocturnal Goatsuckers have slender bodies, short necks, and broad wings, not very sharply pointed at the extremity, as the second quill is slightly longer than the first. The tail is almost straight at its tip; the beak is short and broad, narrow at its base, and curves downwards from beneath the nostrils. The centre toe of the small delicate foot is considerably longer than the rest, and is connected with that on each side by a fold of skin extending as far as the first joint; the small inner toe is entirely detached from the rest; the tarsus is partially covered with small feathers, and upon its lower portion is defended by horny plates; the claw upon the middle toe is serrated. The plumage, which is composed of large feathers, is fleecy; the upper parts of the body are dark grey, variously marked with brownish black and reddish yellow; the under side is light grey, streaked and spotted with black and dark brown; the brow and edges of the jaws are indicated by whitish lines; the three first quills in the wing of the male are decorated with a white, in the female with a yellow spot. The centre tail-feathers are grey, striped with black; the rest are paler, and rather *spotted* than streaked with black: they terminate in a pointed white patch. The markings in the plumage of the female are less distinct than in that of her mate, and the exterior tail-feathers are spotted and tipped with reddish yellow. The length of this species is about ten, and its breadth twenty-one inches; the wing measures seven and a quarter, and the tail between four and five inches. The European Night Jar inhabits some parts of Asia and the whole of our continent, if we except its extreme north and the southern provinces of Spain; in the latter country it is replaced by a very similar bird, the Red-breasted Goatsucker (*Caprimulgus ruficollis*). It is at present undecided whether the Jotaka (*Caprimulgus jotaca*), met with in Japan, is identical with the European species. (The egg of the European Goatsucker is represented at Fig. 41, Coloured Plate XVI.)

THE RESPLENDENT GOATSUCKER.

The Resplendent Goatsucker (*Caprimulgus eximius*) is a most beautiful bird, inhabiting Northern Africa, remarkable for the brilliancy of its plumage, which is almost entirely of a bright golden hue, marked upon the head, breast, and back with oval *spots*, and upon the wings and tail with *streaks* of a somewhat deeper shade; the throat, vent, a spot upon the pinions, and the tips of the exterior tail-feathers are white. Rüppell, who first discovered these birds in Bahiuda, tells us that they frequent vast steppes, and that their gay plumage blends most deceptively with the yellow stubble and light sand which abounds in their favourite haunts. We ourselves have often met with them in Cordofania.

THE EUROPEAN GOATSUCKER (*Caprimulgus Europæus*).

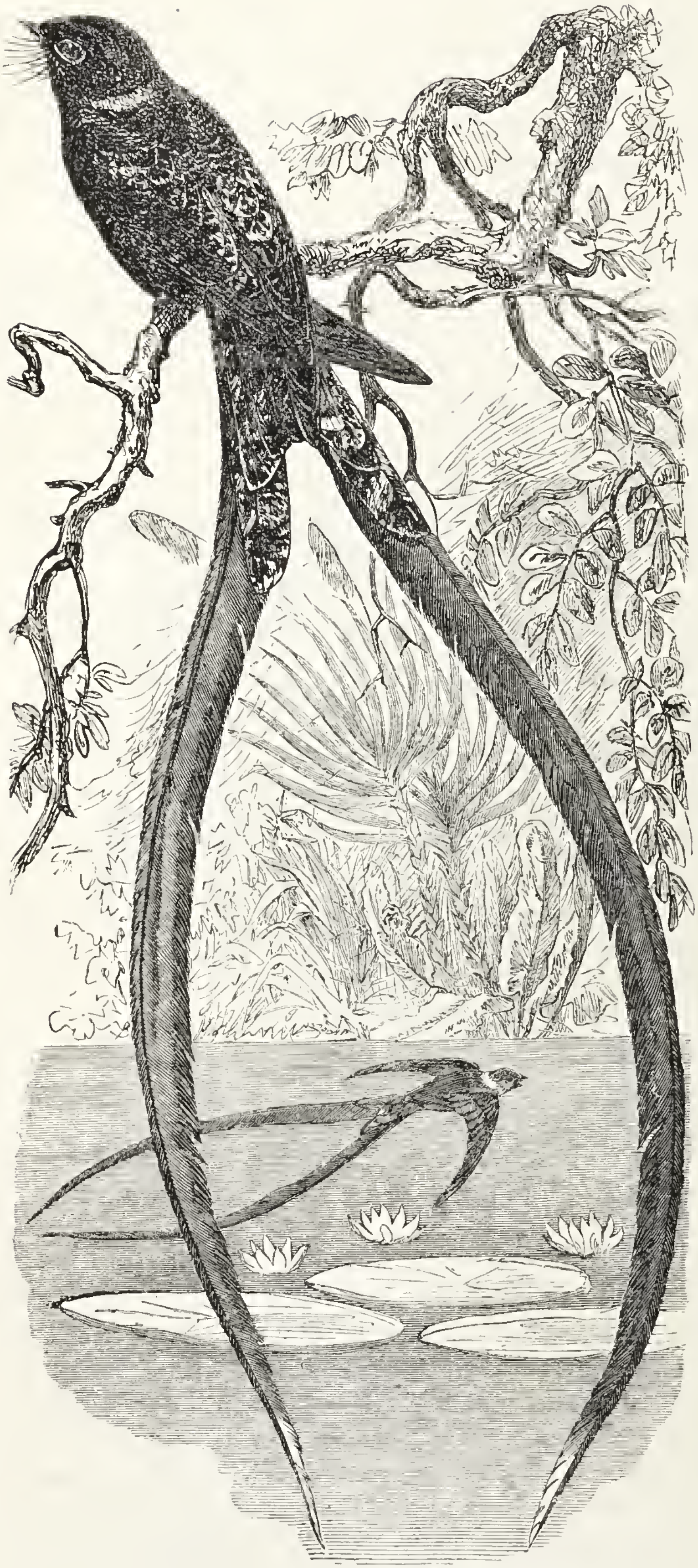
The BRISTLED NIGHT JARS (*Antrostomus*), indigenous to America, are recognisable by their long, flat beak, which is hooked at its tip, by their prominent tube-like nostrils, and the ten stiff strong bristles, of about an inch in length, that grow at the base of the upper mandible, and can be lowered or raised at pleasure. The second or third quill exceeds the rest in length; the tail is long, but comparatively narrow, more rounded at its tip, and the plumage is also thicker, and composed of smaller feathers than that of such of their congeners as we have already alluded to.

THE WHIP-POOR-WILL.

The Whip-poor-Will (*Antrostomus vociferus*), so called from its peculiar cry, is about nine inches and one-third long, and seventeen and a half broad; the wing measures seven and a half, and the tail five inches. The upper parts of the body are dark brownish grey, spotted with brownish black; the region of the cheeks is brownish red, the wing-covers and quills are dark brown, spotted in lines with a paler tint, the latter tipped with a mixture of both shades; the four centre tail-feathers resemble the back in colour and markings, whilst those at the exterior are white, slightly spotted on the upper portion, and dark brown towards the end. The upper parts of the throat and breast are dark brown, with blackish brown markings; the rest of the under side is of a paler hue. A yellowish white line passes across the front of the throat. North America is the actual habitat of this species, which is, however, frequently seen in Central America and the West Indies during the course of its migrations.

The AFRICAN NIGHT JARS (*Scotornis*) constitute a group of birds distinguished from their congeners by their remarkably long graduated tail, which far exceeds the body in length; the third quill of the wing is longer than the rest, thereby rendering it less pointed than that of most Goat-suckers; the beak is very small and delicate, and the bristles at its base comparatively long; the inner toes are longer than those on the exterior. The plumage is somewhat difficult to describe; in *Scotornis climacurus* the body is principally of a pale reddish brown, with dark markings; the chin, cheek-stripes, and extremities of the smaller wing-covers are white, the quills black, spotted with grey on the lower half; the first six are striped with white in the middle; the rest are spotted with red and black, and tipped with white. The centre tail-feathers are marked with undulating lines of different shades; those at the exterior are white upon the outer web, and the two next in order terminate in a white spot; the lower side is a mixture of brown and grey, arranged in wave-like curves. The male is about fifteen inches long and twenty broad; the wing measures five inches and a half and the tail full nine and a half. The body of the female is considerably shorter than that of

THE WHIP-POOR-WILL (*Antrostomus vociferus*).



THE LYRE-TAILED NIGHT JAR (*Hydropsalis forcipata*).

her mate. All the sparely-covered, sandy plains of Central Africa afford a home to the members of this group. According to our own observations they are rarely found beyond sixteen degrees north latitude; other authorities affirm that they occasionally wander as far as Europe, and have been met with in Provence, but we are inclined to question the accuracy of this statement.

The LYRE-TAILED NIGHT JARS (*Hydropsalis*), a group of very remarkable birds inhabiting South America, are recognisable by their long powerful wings, in which the first quill is much bent; their slender, but comparatively strong beak; their delicate feet, partially covered with feathers, and protected with horny plates upon its lower half; and their remarkably forked tail, which in the male bird is occasionally of great length.

THE LYRE-TAILED NIGHT JAR.

The Lyre-tailed Night Jar (*Hydropsalis forcipata*), as the species with which we are most familiar has been called, is spotted with brown and yellow upon its body, the centre of the throat being white. The exterior tail-feathers of this beautiful bird are from twenty-six to twenty-eight inches long, while the body does not exceed seven, and the wing nine inches. According to Azara, the Lyre-tailed Night Jar is somewhat rarely met with, as it usually frequents the inmost recesses of the vast forests of South America. Its scientific name, *Hydropsalis*, has been derived from the fact that like other Night Swallows it flies close to the water when passing over the lakes or rivers in search of food.

Some Goatsuckers have certain feathers of their wings so remarkably developed, that they have been called by the Arabs "*the four-winged birds*," and are described by Swainson under the name of MACRODIPTERYX.

THE LONG-WINGED MACRODIPTERYX.

The Long-winged Macrodipteryx (*Macrodipteryx longipennis*) has the tail of moderate size, and straight at its extremity; the foot resembles that of the European species; the beak is delicate and furnished with long bristles at its base. The plumage of the *male* bird is characterised by the long appendages which grow between the primary and secondary quills. These appendages, or rather shafts, are frequently seventeen inches long, entirely bare to within six inches of the extremity, where the web grows upon both sides and forms a broad expansion. The wing of the female is entirely without this remarkable structure. The plumage, which is somewhat dusky, is a mixture of red and black; the throat is paler, and the nape decorated with a yellowish tint; the primaries are striped black and red, with a dark tip; the secondaries are black with four red stripes. The centre tail-feathers are grey, spotted and streaked with black. The length of these birds is about five inches: the tail measures from three and a half to four, and the wing six inches and three-quarters.

THE STREAMER-BEARING NIGHT JAR OR "FOUR WINGS."

The Streamer-bearing Night Jar, or "Four Wings" (*Cosmetornis vexillarius*), is another remarkable species, closely allied to that above described, but distinguished by the development, not of one only, but of two excessively long feathers, that grow from each wing. These peculiar appendages are furnished with a web upon both sides, extending throughout their entire length. We are entirely without particulars as to the life and habits of this extremely rare bird, which inhabits South-eastern Africa.

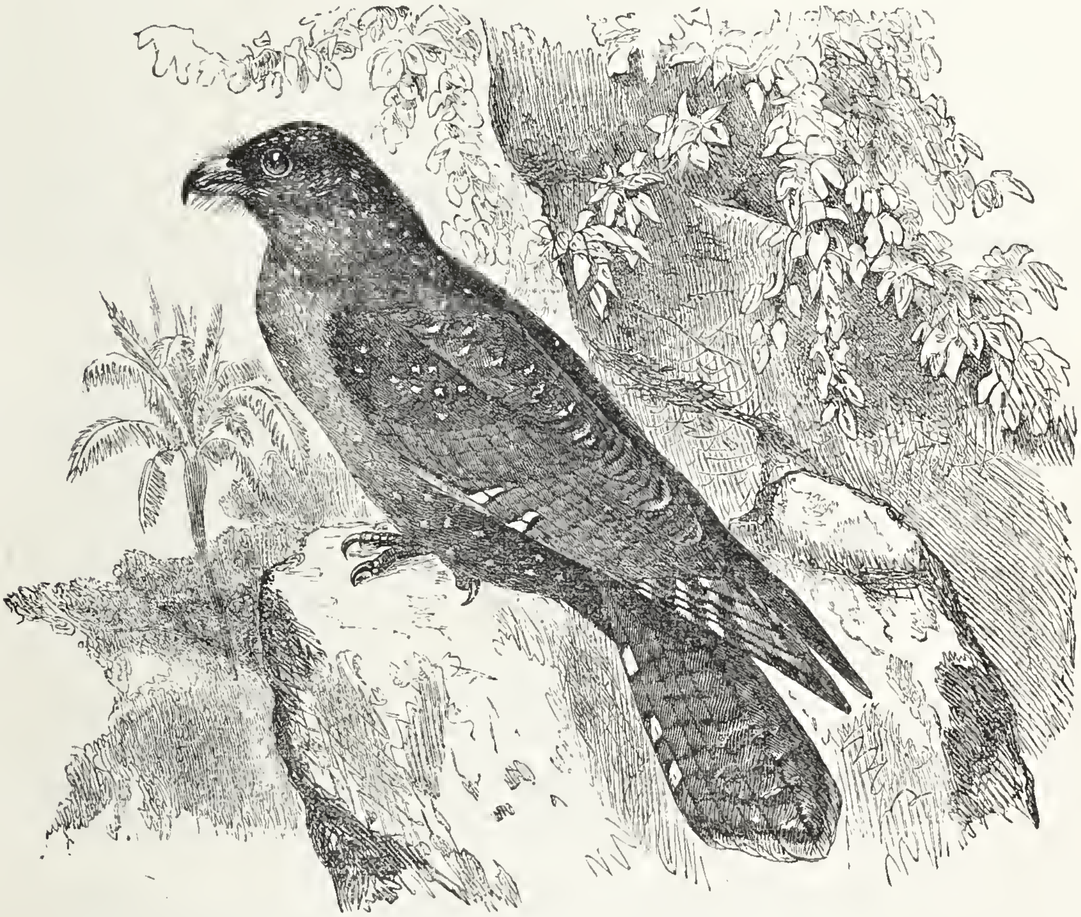
All the various groups of Goatsuckers whose outward appearance we have thus briefly described frequent woodland districts or forests, in the immediate neighbourhood of large plains and open fields, as such localities abound with the insects on which they mainly rely for nourishment. Still there are exceptions. The Red-throated Goatsucker, for example, is most frequently seen upon rocks slightly overgrown with trees or shrubs, and though it builds in various situations, prefers plantations of olive-trees, when about to make its nest, whilst the Cream-coloured Night Jar (*Caprimulgus isabellinus*), on the contrary, usually conceals itself amidst the bushes or grass that cover the sandy banks of the Nile. During the day most species seek a shady retreat, and either sit upon the ground whilst reposing, or find shelter upon trees, on the boughs of which they recline, not after the manner of other birds, but in such a position as to allow the entire body to *lie* along the supporting branch, holding themselves, meanwhile, firmly in place by means of their inner toes, and the serrated claw, with which the central toe is furnished; it is only when disturbed from their slumbers that the Goatsuckers perch in the ordinary manner; as soon as the supposed danger is over, they at once resume their favourite attitude. Whilst asleep the eyelids are kept completely closed, but if suddenly awakened, these birds blink, and peer around them, after the fashion of an Owl, and seek to conceal themselves by lying close to the earth, or to the tree on which they are reposing. Upon the ground they move with much difficulty; indeed, it has often been stated that their feet are useless as a means of progression, but this is not the case, as we have on several occasions seen the African Goatsuckers walk some little distance when passing from one resting-place to another. The flight of all these various groups is unsteady and apparently aimless during the day, but at sunset they seem endowed with new life, and may be seen alternately skimming and hovering over the face of the country, in pursuit of moths, beetles, and various other insects, upon which they subsist. When their appetite is appeased, they rest for a time upon some branch, and then sally forth again before morning dawns to procure a second repast. It is not uncommon for the Goatsuckers to wander to a very considerable distance from their usual haunts during these nocturnal excursions, and even approach the immediate vicinity of towns and villages; nay, so inquisitive and bold are they in regard to the objects they meet with whilst in search of prey, that they will often follow and hover round a man or a dog for a quarter of an hour at a time. During the breeding season their flight becomes still more varied and beautiful, and the birds themselves seem roused to a higher degree of intelligence than is observable at other times; such species especially, as possess the remarkably long wings or tails we have described, cannot fail to impress those who are fortunate enough to see them gliding or hovering aloft, with their flowing plumage alternately closed or outspread, as they perform their light and elegant gyrations through the realms of air. Russegger describes the African "Four Wings" as looking like some strange being from another world, as it whirls along, at one moment appearing to multiply itself by rapidly assuming the most various attitudes, or revolving like a shuttlecock, with its long feathers streaming and twisting in the wind. The voices of these various birds differ very considerably; some species uttering a harsh, droning note, not unlike the sound of a spinning-wheel (whence is derived their name of "Night Jar," or "Night Churr"), whilst others are capable of producing by no means inharmonious tones. The European Goatsucker, when alarmed, purrs very much like a cat, and during the breeding season attracts the attention of its mate by two distinct notes; at other times its cry may be represented by the syllables, "Dak, dak," faintly and hoarsely uttered. So dismal and unearthly are the voices of some American Night Jars, that Schomburghk tell us that neither Indians, Creoles, nor Negroes would venture to shoot one of them, regarding them as direct embodiments of, or emissaries from, the various evil spirits and enchanters, of whose machinations and spells the ignorant natives live in constant dread.

"A Goatsucker," says Waterton, "inhabits Demerara, about the size of an English Wood Owl, whose voice is so remarkable that when once heard it is not to be easily forgotten. A stranger would never believe it to be the cry of a bird, but would say it was the departing voice of a midnight murdered victim, or the last wailing of poor Niobe for her children, before she was turned to stone. Suppose a person in hopeless sorrow, beginning with a loud note, 'Ha, ha; ha, ha; ha, ha, ha;' each note lower and lower, till the last is scarcely heard, pausing a moment between each exclamation, and you will have some idea of the moaning of the Great Goatsucker of Demerara. Other species articulate some words so distinctly that they have received their names from the sentences they utter, and absolutely bewilder a stranger on his arrival in their vicinity. One sits down close to your door, or flies and alights three or four yards before you as you walk along the road, crying, 'Who are you? who, who are you?' Another bids you 'Work away; work, work, work away!' A third cries mournfully, 'Willy, come go; Willy, Willy, Willy, come go!' and a fourth tells him to 'Whip-poor-Will, Whip-poor-Will!' in tones wonderfully clear and startling."

As regards their instincts and capabilities, the nocturnal Goatsuckers are far behind the diurnal members of their family, and exhibit so little sense of self-preservation, as constantly to expose themselves to great danger. We have frequently, whilst camping out in Africa, whenever we have kindled a fire, been visited by numbers of these birds, apparently quite regardless of the risk they ran of being brought down by our gun. In Spain, however, the Goatsuckers appear to be somewhat more on the alert; indeed, owing to their supposed dexterity in evading pursuit, they are there called by the peasantry *Engaña Pastor*, or "Shepherd Deceivers," as that class of men come most in contact with these birds, whilst tending their flocks; not from the absurd reason that has obtained such universal credence, but because these much-maligned visitants perform a most invaluable service both to the farmer and his cattle.

"When the moon shines brightly," Waterton continues, "you may have a fair opportunity of examining the Goatsucker; you will see it close by the cows, goats, and sheep, jumping up every now and then under their bellies. Approach a little nearer; he is not shy; 'he fears no danger, for he knows no sin.' See how the nocturnal flies are tormenting the poor kine, and with what dexterity he springs up and catches them, as fast as they alight on the belly, legs, and udders of the poor animals. Observe how quietly they stand, and how sensible they seem of his good offices; for they neither strike at him, nor try to drive him away as an uncivil intruder. Were you to dissect him, and inspect his stomach, you would find no milk there; it is full of the flies that have been annoying the herd."

All Night Jars breed but once in the year, and that always during the spring-time of their native lands. No nest is built, the parents contenting themselves with any retired, shady nook, when about to deposit their eggs. Towards their young, both parents exhibit great attachment and devotion, and will exert every effort to entice any approaching stranger from the little family. Many strange tales have been circulated as to the manner in which their eggs are conveyed from one place to another, in time of danger, and on this point we may now venture to speak with authority, having been fortunate enough to be an eye-witness to the whole proceeding. Upon the occasion to which we refer, a pair of Night Jars which we purposely disturbed, appeared to be overcome with fear for the space of a minute, then, suddenly recovering themselves, they each seized an egg in their capacious beaks, and bore it carefully and gently away, flying so near the ground as almost to touch it with their feet. Both parents assist in the labour of incubation, and



THE OIL BIRD (*Steatornis Caripensis*).

continue to sit, even after the nestlings have left the shell, in order to keep them warm: according to some authorities, this practice is continued until they are almost fledged. The young are fed during the night, and reared upon a variety of insect food. When taken from the nest, they thrive and grow rapidly, if provided with a plentiful supply of flies.

The GIANT GOATSUCKERS (*Nyctibius*) constitute another South American group, easily recognisable by their strongly-hooked beak, heavy foot, the central toe of which has no serrated claw, powerful body, and large head. The wings (in which the third quill exceeds the rest in length) are long and pointed, the tail long, and slightly rounded, and the plumage rich, soft, and lax. The beak is very peculiar in its formation, and appears triangular when seen from above; the upper mandible is extremely broad at its base, sloping gently downwards as far as the nostrils, from which point it becomes thin, round, compressed, and curves gently over the lower mandible, which is also slightly bent at its tip, and somewhat shorter than the upper portion. The sharp edges of the beak have a tooth-like appendage, about one line in length, placed just where it begins to curve. The jaws open almost to the ears, and the gape is therefore enormous. The horny portion of the bill is almost entirely concealed from view by a growth of feathers intermixed with bristles, which covers the upper mandible, from the nostrils almost to the tip. The legs are short, the toes slender, and the claws comparatively strong and hooked. The central nail has a prominent ridge.

THE IBIJAU, OR EARTH-EATER.

The IBIJAU, or EARTH-EATER (*Nyctibius grandis*), is by far the largest member of this group. Its length, according to the Prince von Wied, exceeds twenty-one, and its breadth forty-seven inches; the wing measures fifteen inches and a half, and the tail ten inches and one-third. A whitish or greyish yellow predominates in the coloration of the plumage, which is darkest upon the upper portion of the body, and marked with a variety of fine brown and black lines; the head-feathers have dark streaks upon the shafts, and triangular spots at the tip. The edges of the wings and region of the shoulders are deep reddish brown, streaked with black, and intermixed with white spots upon the carpal joint; the under side is white, ornamented with curved brown lines, each feather being tipped with yellow, the quills are dark greyish brown, striped with a paler shade, and spotted with white upon the outer web, the tail-feathers are decorated with six or seven dark and light stripes, the throat is white, marked with brown, as is the breast, the latter is also streaked longitudinally with black; the hinder parts of the body are pure white; the beak and feet are yellowish grey, and the eyes dark blackish brown.

These large Goatsuckers, though by no means rare in South America, are not frequently seen, as they remain during the entire day ensconced at the summit of the most lofty trees, lying full length upon the thickly foliaged branches in the manner already described. So closely does their plumage resemble the bark of the trees on which they recline, that it is very difficult to detect their presence, and so extremely dull are some species that, as the Prince von Wied tells us, they allow themselves to be fired at repeatedly without attempting to stir, or will sit quietly and permit a snare to be thrown over their heads. We cease to wonder at such utter stupidity when we learn from the same source that though the body of these Swallows equals that of the Raven, their brain does not exceed a hazel-nut in size. Evening has no sooner set in than, like their congeners, they at once commence their search for moths and similar prey, in pursuit of which they soar to a very considerable height; and it is by no means rare to find the ground completely strewn with the wings of the enormous moths and butterflies which they attack and seize in their huge beaks. During the night their dismal cry is constantly heard, as one mate calls to the other; but when morning approaches they seek their favourite retreats. Burmeister tells us that the two eggs that constitute a brood are deposited in any slight cavity in the trees. Such as he obtained were oval in shape, with a lustreless, pure white shell, thickly covered with brown dots of various shades, most thickly strewn over one end.

THE GUACHERO, OR OIL BIRD.

The Oil Bird (*Steatornis Caripensis*) has hitherto been classed among the Goatsuckers, but it differs so essentially from any other member of that family in its mode of life, that we have decided upon describing it entirely apart. The body of this remarkable species is slender, the head flat and broad; the wing, in which the third and fourth quills exceed the rest in length, though long and pointed, does not extend as far as the extremity of the well-developed tail. The beak is broad at its base, compressed in the middle, and terminates in a hook; its tip, moreover, is furnished with two denticulations; the gape extends to the eyes, but the lower mandible is feeble and considerably shorter than the upper part of the beak. The feet are so small as to be almost useless upon the ground: their soles are callous, and the tarsi without feathers; the front toes are all of equal size, entirely unconnected, and the short hinder toe is reversible. The plumage is extremely soft, almost silky, and the region of the beak is overgrown with long bristles; the large eyes are protected by heavy lids covered with long hairs. The gullet is not dilated into a crop, and the stomach is very muscular; the entrails are covered with a fatty layer of such thickness that they may be said to be embedded in fat. The plumage is of a beautiful reddish brown, deepest in shade upon the back; the head, breast, belly, wings, and tail are rust-red, marked with heart-shaped white spots, which are here and there surrounded by a black line. The eye is blueish black, the beak and feet horn-grey. The length of this species is about twenty-one inches, and its breadth about forty-two inches. Humboldt, who discovered this remarkable bird in 1799, found it living in the rocky caverns of Caripe, and more recent travellers have met with it in the dark clefts and fissures of rocks among the Andes.

"The Cueva del Guachero, or Cave of the Guacheros," as described by Humboldt, "is a vast fissure, pierced in the vertical profile of a rock, facing towards the south; and the rocks which surmount the grotto are covered with trees of immense height; succulent plants and orchidaceæ rise in the driest clefts, and plants waving in the wind hang in festoons at the entrance. Within the cave vegetation continues to the distance of forty paces. Daylight penetrates far into the grotto, but when the light begins to fail the hoarse voices of the inhabitants become audible, and it would be difficult to form an idea of the horrible noise occasioned by thousands of these birds in the dark parts of the cavern. Their shrill and piercing cries strike upon the vaults in the rocks, and are repeated by the subterranean echoes. The Indians showed us the nests of the Guacheros by fixing a torch to a long pole; these nests were fifty or sixty feet above our heads, in holes of the shape of funnels, with which the roof of the grotto is pierced like a sieve. The noise increased as we advanced, the birds becoming scared by the torches we carried, but when the din somewhat abated, immediately around us we heard at a distance the plaintive cries of others at roost in the ramifications of the cavern. It seemed as if different groups answered each other alternately. The Indians enter the Cueva del Guachero once a year, near Midsummer. They go armed with poles, with which they destroy the greater part of the nests. At that season several thousand birds are killed; and the old ones, as if to defend their brood, hover over the heads of the Indians, uttering terrible cries. The young, which fall to the ground, are opened on the spot. Their peritoneum is found extremely loaded with fat, and a layer of fat reaches from the abdomen to the vent, forming a kind of fatty cushion between the legs. At the period commonly called at Caripe the "oil harvest," the Indians build huts with palm leaves near the entrance and even in the porch of the cavern, where, with a fire of brushwood, they melt in pots of clay the fat of the young birds just killed. This fat is known by the name of butter or oil (*mantece* or *aceite*) of the Guachero; it is half liquid, transparent, without smell, and so pure that it may be kept above a year without becoming rancid. At the convent of Caripe no other oil is used in the kitchen of the monks but that of the cavern, and we never observed that it gave the aliments a disagreeable taste or smell."

Funck, who also visited the cavern above described, states that the Guacheros leave their nests after darkness has completely closed in, and that their harsh, raven-like cry may then be heard as they fly about in quest of food. Fruit forms their usual nourishment, and this they will swallow, even if as large as a Pigeon's egg; but the seeds and kernels they reject as indigestible. The nest is constructed of clay, and the brood consists of from two to four eggs. Grosz also gives an account very similar to that of Humboldt respecting another stronghold of the Oil Birds, called the Ravine of Iconongo, that he visited in New Granada. This extensive nesting-place is about half a mile long, and from thirty to forty feet broad, and had to be entered by means of a rope let down from above. Grosz fortunately succeeded in obtaining many Guacheros, both dead and alive, and made valuable observations relative to their demeanour and habits. Their movements in the air, he tells us, are light and rapid, the pinions and tail during their flight being held fully expanded; upon the ground their gait is extremely awkward, their feet requiring assistance from the wings, even to sustain the creeping hobbling motion to which their progress when on *terra firma* is restricted. Whilst thus attempting to walk the tail is slightly raised, and the head and neck bent forward in a constant succession of serpent-like movements, in order to maintain their balance. When perched they keep the body erect, supporting it slightly upon the wings, and hang the head droopingly. If much excited whilst in flight, the cry of the Guachero becomes positively unearthly, so dismally hideous are its tones. Both parents brood alternately upon the eggs, which, according to Grosz, are white and pear-shaped. No preparations whatever are made for the reception of the young family, the eggs being merely deposited in the clefts of the rocks. The nestlings, when first hatched, are extremely ugly and uncouth, and completely helpless until they are fully fledged; so extraordinarily voracious are they that, if other food is not on the spot, they will fall furiously upon each other, or even seize and drag at their own feet or wings.

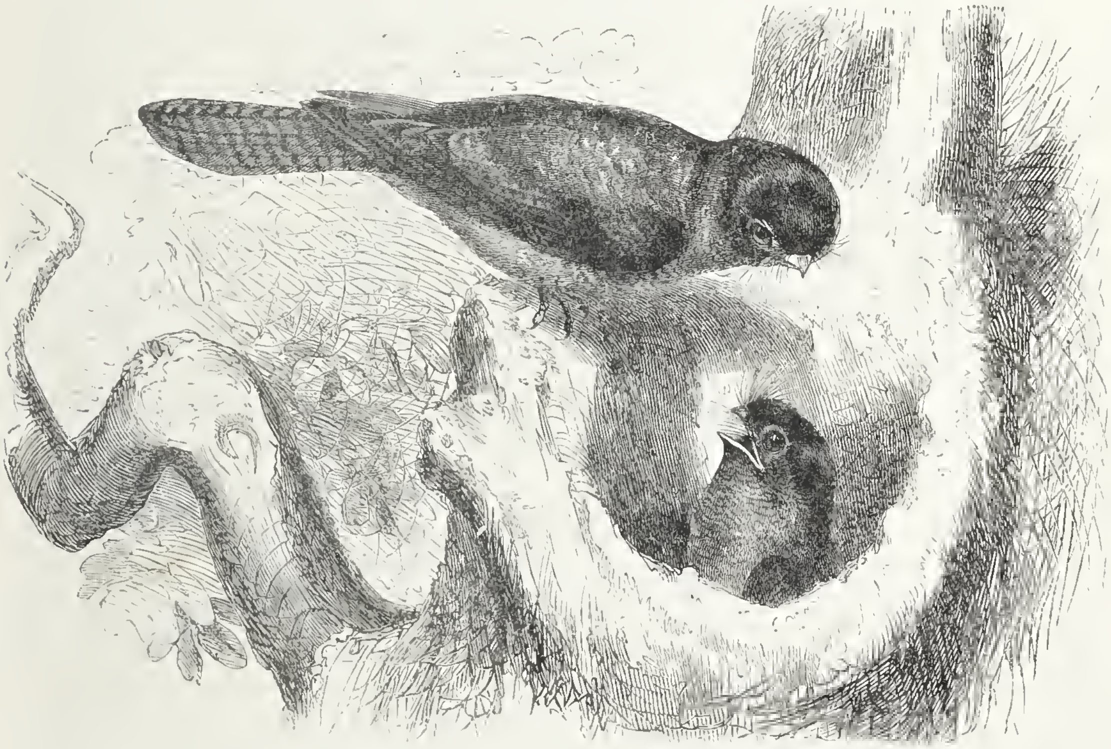
The OWL SWALLOWS (*Podargi*) constitute a family bearing considerable resemblance to the Night Jars, both in their general appearance and mode of life. These birds have a slender body and short neck; their head is broad and flat, their wings short and blunt, their tail long, their tarsi high and powerful. The beak, which opens farther back than the eyes, is large, flat at its base, and broader than the brow; the mandibles are hooked at the tip, of equal length, and smooth at the margin; the nostrils are situated at the base of the beak, and are almost entirely concealed beneath the feathers of the forehead. The foot is short, with three of the toes placed in front, and one pointing directly backwards; the latter is not reversible. The plumage is soft, and dusky in its coloration; the region of the beak, and, in some cases, that of the ear, is covered with a growth of bristles.

Such of these birds as we are at present acquainted with, inhabit the forests of Southern Asia, as also of New Holland and the neighbouring islands; but little has as yet been ascertained respecting their general habits, and we must therefore confine ourselves to the mention of those species with which we are best acquainted.

The DWARF OWL SWALLOWS (*Ægotheles*), found exclusively in New Holland, are recognisable by their long but powerful body, nearly round head, short, rounded wing (in which the second quill exceeds the rest in length), long, rounded tail, and comparatively high and bare tarsi; the toes are of equal length and unconnected; the beak is thick, broad, and compressed at its base, but becomes suddenly narrow towards its extremity, and terminates in a flat hook; the lower mandible is furnished with a hollow rim that encloses the curved tip of the upper part of the beak. The plumage is soft in texture, except around the beak and in the region of the eyes and brows, these parts being covered with a bristle-like growth.

THE TRUE DWARF OWL SWALLOW.

The True Dwarf Owl Swallow (*Ægotheles Novæ Hollandiæ*) is about nine inches and a quarter long, and above twelve in breadth. The upper part of the body is dark brown, streaked with white; the entire under surface, a spot near the eye, and two sickle-shaped lines, the one on the neck and the other at the back of the head, are grey, dotted with black and reddish yellow; the anterior quills are brown, spotted with light brown and grey on the inner web; the tail is dark brown, regularly striped with grey, and dotted with black; the iris is nut-brown; the feet of a pink flesh-colour. The sexes are alike in size, and similarly tinted, but the plumage of the young is darker than that of the adult bird. Gould tells us that this species lives and breeds in all woodland districts throughout Southern Australia and Tasmania, and that it also frequents the shrubs and bushes upon the coast. Its flight is direct and slow, and, when perched, its attitudes resemble those of an Owl; like that bird, if disturbed, it turns its head rapidly in all directions, and emits a low, hissing sound. The Dwarf Owl Swallow breeds twice in the year, and deposits its four or five round pure white eggs in the hollows of trees. One strange habit possessed by this bird renders the discovery of its retreat very easy; for no sooner is any unusual sound made in the vicinity of its hole than the active little occupant at once scrambles up to the entrance, and putting out its head, peers around to discover the cause of the disturbance. Should danger seem imminent it at once takes flight, and seeks safety elsewhere; but should nothing alarming be in view, it quietly returns to the bottom of its abode, until again roused by some voice from the outer world.



THE TRUE DWARF OWL SWALLOW (*Ægotheles Novæ Hollandiæ*).

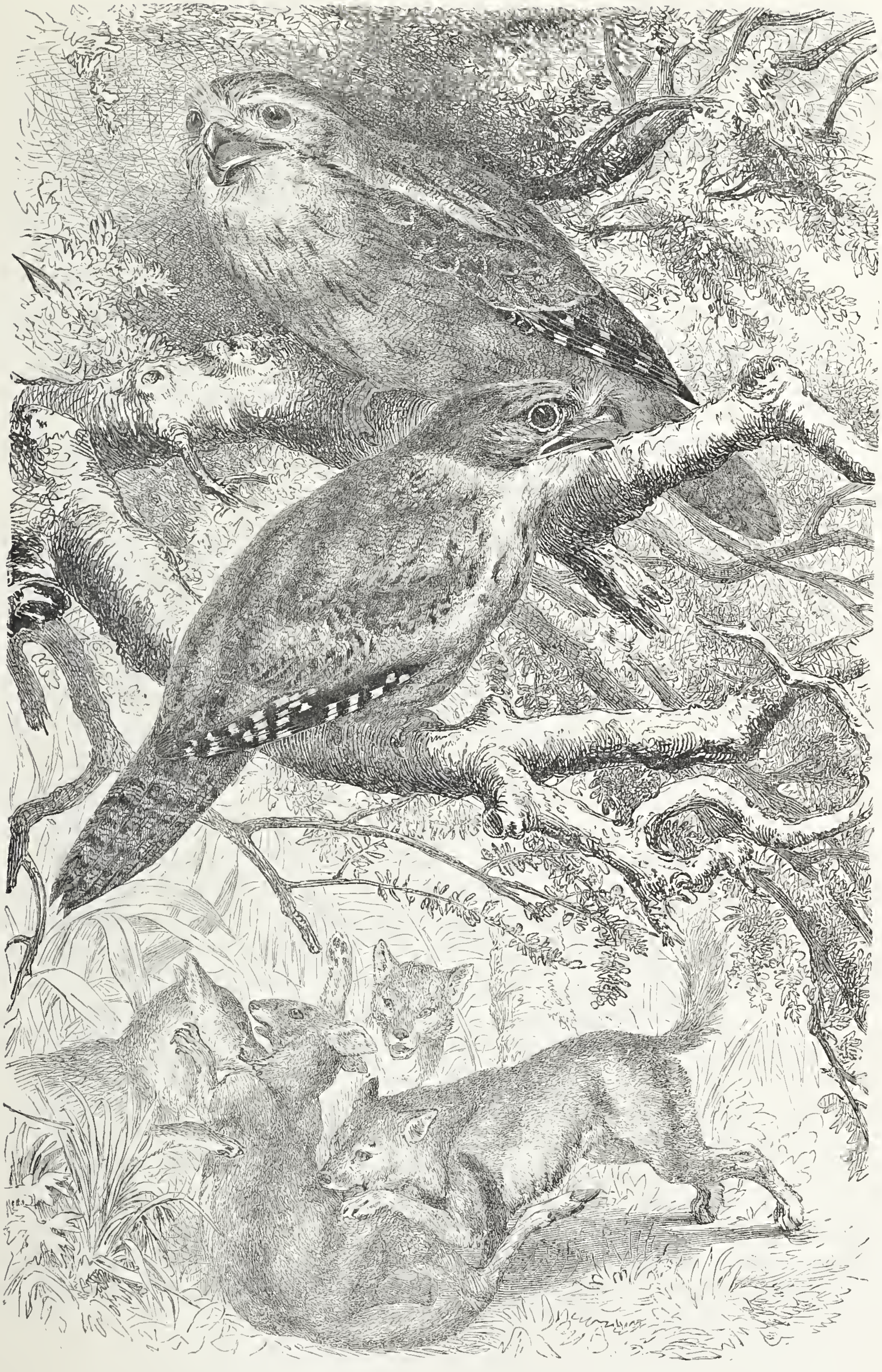
The GIANT OWL SWALLOWS (*Podargus*) are birds of considerable size, with large flat heads, moderately large wings, in which the first quill exceeds the rest in length, long rounded tails, and short tarsi, furnished with a foot of moderate size, the two innermost toes connected by a fold of skin. The beak is hard, powerful, much broader than it is high, slightly curved at the roof of the upper mandible, and very decidedy hooked at its tip, which fits into a corresponding groove in the lower portion of the beak; the gape extends as far as the hindermost corner of the eye. The plumage is soft, and resembles that of the Owl. The beak has but a sparse growth of bristles.

THE GIANT OWL SWALLOW.

The Giant Owl Swallow (*Podargus humeralis*) is a bird about the size of a Crow. The upper part of the body is brown marked with greyish white and dark brown, the top of the head being streaked with blackish brown, and spotted with white. The quills are brownish black, marked with rows of spots upon the outer, and striped upon the inner web; the beak is light brown shaded with purple; the feet and eyes are yellowish brown. The many varieties of this species resemble each other both in appearance and habits.

"Like the rest of the genus, the *Podargus humeralis* is strictly nocturnal, sleeping throughout the day on the dead branch of a tree, in an upright position, across and never parallel to the branch, and which it so closely resembles as scarcely to be distinguishable from it. I have occasionally seen it beneath the thick foliage of the Casuarinæ, and I have been informed that it sometimes shelters itself in the hollow trunks of the Eucalypti, but I could never detect one in such a situation. I mostly found them in pairs, perched near each other on the branches of the Gums, in places not at all sheltered from the beams of the mid-day sun."—Gould.

The sleep of the Giant Owl Swallow is so profound that one of a pair may be shot from a branch without the mate that is sleeping at its side being roused, and the heavy sluggard may be pelted with stones, or struck with a stick, without being awakened from its slumbers. Should it at last be roused to consciousness, it scarcely exhibits animation sufficient to prevent it from falling to the ground, as it slowly flutters, in a semi-torpid state, to the nearest tree, when it at once perches, and falls into a sleep as heavy as that from which it has just been disturbed. No sooner, however, has night set in, than the previously drowsy stupid bird becomes a new creature, and after carefully preening its plumage, at once proceeds to run actively and briskly up and down the branches of trees in search of Grasshoppers; it also extracts larvæ from under the bark, after the manner of Woodpeckers, or dives down holes and fissures to find any delicate morsels that may be concealed within. Its flight is not particularly good, owing to the shortness of it wings, but it passes with considerable rapidity from tree to tree, and occasionally amuses itself by a variety of manœuvres in the air. Gould is of opinion that this species lives entirely upon insects, but Verreaux affirms that it frequents morasses during winter, when food is scarce, and consumes snails or other inhabitants of the water, and that in the breeding season it will attack young birds, kill them by repeatedly striking them against the stem of the tree, and then devour them. The pursuit of prey is carried on late in the evening, and again just before dawn, the intermediate hours being devoted to the process of digestion, combined with heavy sleep. The breeding season commences about July, and is ushered in by repeated battles between the males, whose loud voices become louder and more dissonant as they dispute possession of a female, or exert themselves to please her with their vocal efforts. Both parents co-operate in building their small, flat nest, which is most carelessly constructed of fine twigs lined with grass and feathers, and is usually placed in a forked branch at about five or six feet from the ground. The eggs are from two to four in number, their shape is elongate, and their colour pure white, so that they are often distinctly visible through the thin walls of their slightly constructed abode. Both



THE GIANT OWL SWALLOW (*Podargus humeralis*).

parents assist in their incubation, the father sitting upon them during the night, and seeking food during the day, whilst the female takes her place upon the nest in his absence. Should the sun's rays prove too powerful for the young, they are carried to a shady nook or hole until mid-day is passed. By November they are fully fledged, but remain for some time longer under parental care and tuition. Gould and Verreaux both inform us that if the season be unusually cold, it is not uncommon for the Giant Owl Swallow to remain for a time in a hole, or on a branch, in a state of complete torpidity. Such of these birds as we have seen caged in Europe were extremely tame, and would not only eat from the hand, but allowed themselves to be carried about the room without any sign of fear.

The FROG-MOUTHS (*Batrachostomus*) constitute a group of comparatively small birds, inhabiting India and its neighbouring islands. Though smaller than the Giant Owl Swallow, they have a still larger beak, which is very broad and flat at its base, slightly arched at its tip, and terminates in a hook; the upper mandible projects over the lower one in all directions; the nostrils are small and covered with feathers, and the wings abruptly rounded; the tail is long, and is either graduated, or has the outer feathers very short; the tarsi and feet are small but strong, the toes powerful and very flexible.

THE PLUMED FROG-MOUTH.

The Plumed Frog-mouth (*Batrachostomus cornutus* or *B. Javanensis*) is an inhabitant of Java, and distinguished from its congeners, not only by the remarkable arrangement of the head-feathers, but by the beauty of its plumage. In this bird the region of the ears and brow is covered with a plume of long, ragged feathers, which hangs down over the eyes and makes the head appear of a size very disproportionate to the rest of the body. The plumage on the back is light rust-red, marked with fine zig-zag black lines, the nape being adorned with a white crescent-shaped patch; the shoulder-feathers are tipped with white spots thrown into relief by an ornamented semicircular line of black at their tips; the brow is marked with reddish yellow spots. The centre of the throat and upper part of the breast and belly are white, partially marked with zig-zag lines; the lower breast is rust-red, spotted with black and white; the tail is light reddish yellow, striped seven or eight times with a deeper shade, and streaked with black; the quills are similarly decorated. The eye is sulphur-yellow, the feet brown, and the beak pale yellow. This extraordinary looking bird chiefly inhabits the thickets of allangallany palm-trees that abound in Java at about 3,000 feet above the level of the sea. Bernstein, who was the first to give us any account of it, says nothing as to its life or habits, but has given us a description of the nest. This delicate little structure, which is formed almost entirely of down from the body of the bird, is placed in a hole within the stem of the palm, and is so small as to render it impossible for the parent to sit in it whilst engaged in the process of incubation. The female is therefore compelled to lie along the stem that encloses her snug cradle, and whilst holding firmly on with her feet, presses her breast against the opening of the nest, and thus imparts warmth to her young. The one egg found by Bernstein was oval in shape and of a dull white, streaked and spotted with brownish red; these markings were most thickly strewn over the broad end, where they formed a kind of wreath.

Another very similar species (*B. auritus*) has the face ornamented with a pair of large tufts of light feathers that project horizontally, giving the bird a very singular and grotesque appearance.

THE SINGING BIRDS (*Oscines*).

Under this name we class numerous families, all of which are more or less distinguished for the perfection of their vocal apparatus. In appearance the members of this order are for the most part pleasing and elegant, and their disposition usually attractive and engaging. Their body is long, the neck short, and their head comparatively large; the beak, though differing much as to its formation, is almost invariably small, straight, or only very slightly curved, and the upper mandible is generally more or less incised; the tarsi are covered with horny plates, the toes long, and the claws large and sharp; the wings, invariably of moderate size, are formed of ten quills, the first of these being usually much stunted or not at all developed; the tail is by no means large, and composed of twelve feathers. The plumage, which is soft, thick, and occasionally downy in texture, is simple and uniform in its coloration; some few species, however, are brilliantly ornamented. The young at first differ considerably in appearance from the adult birds, and both young and old moult their feathers once within the year. All the members of this extensive order are active, intelligent, and extremely restless; their flight is light and rapid, and their movements amongst the branches or upon the ground are distinguished by extraordinary agility. In all, the sight and hearing are very perfect. They live chiefly upon insects and seeds of various kinds, but some few species will kill and devour small birds or similar prey. Every part of the world is enlivened by the presence of these delightful warblers, whose cheerful voices are heard even in the most dreary and desolate regions, on burning, sandy plains, as well as upon the ice-bound shores of arctic regions. Such as inhabit tropical climates do not migrate; but those within the temperate zones, as winter approaches, remove towards the south, seeing that their native lands at that season do not afford them a sufficient supply of food. Very great variety is observable in the construction of the nests built by different species of singing birds, many exhibiting wonderful skill, and in some cases actually *sewing* together the materials they employ, with their sharp beaks, whilst others are contented to drag a few leaves into a hole and thereon deposit their brood. The eggs, sometimes five or six in number, are hatched by the agency of both parents, who also assist each other in procuring food for the young progeny. The latter grow with great rapidity, and are capable of providing for a family of their own after the first year.

The TOOTH-BEAKED SINGING BIRDS (*Dentirostres*) constitute a large tribe, the members of which are at once recognisable by a notch or tooth at the extremity of the upper mandible.

The SHRIKES (*Lanii*) are a very numerous and well-known group, equally common in all parts of the world. In these birds the body is powerful and the breast prominent; their neck is strong, the head comparatively large and round, the wings broad and rounded, the third or fourth quill far exceeding the rest in length, while their tail is long and graduated. The beak is powerful, compressed at its sides, and terminates in a strong hook, near which the upper mandible has a very perceptible tooth-like appendage. The feet are large and robust, the toes long, and armed with sharp claws; the plumage is rich, thick, and lax, and its coloration pleasing and varied.

Woods surrounded by meadows or pasture lands are the favourite resorts of these birds; but they are also constantly found dwelling in hedges, among brushwood, or upon solitary trees. Such species as frequent northern latitudes migrate regularly during the autumn, and find their way, in pursuit of food, even to Central Africa. In their habits they closely resemble some of the birds of prey, and their movements bear considerable similarity to those of the Raven family. Although by no means conspicuously endowed in most respects, the voice in some species is highly developed, and all seem capable of improving their natural powers of song, by imitating the sounds produced by other birds. Their flight is irregular, and their step upon the ground a mere series of hops; but, despite these deficiencies, they display great dexterity in securing their prey, even should it equal themselves in size; and are exceeded by no other members of the feathered creation in rapacity and the cruelty which they display towards their victims. They devour insects in large quantities, but by no means rely solely upon them for food, for they destroy great numbers of Sparrows and other small birds; and their attacks are all the more dangerous as they are entirely unsuspected. It is not uncommon to see a large party of little birds quietly perched around a Shrike, and evidently regarding it as a friendly companion, whilst in reality the treacherous intruder is merely watching for a favourable moment to dart upon and kill some member of the group that it has already singled out as its prey. One very remarkable habit, depicted in the engraving on page 145, is highly characteristic of this family; we allude to the practice of spiking their victims upon sharp thorns, from which circumstance they have obtained the well-merited appellation of Butcher Birds. The nest of the Shrike is artistically constructed of the green portions of plants, and placed in a thick bush or closely-foliaged branch. The brood consists of from four to six eggs, which are hatched by the female alone, whilst her mate undertakes the duty of providing for her nourishment. Both parents assist in feeding the nestlings, and in defending them. The young remain under parental care and instruction for a considerable time after they are fully fledged, sometimes not leaving it until the winter, for the Shrike, if undisturbed, breeds but once in the course of the year.

THE SENTINEL BUTCHER BIRD.

The Sentinel Butcher Bird, or Great Grey Shrike (*Lanius Excubitor*), is from nine and a half to ten inches long, and its breadth about fourteen inches; the wing measures four inches and the tail four and a half. Upon the upper part of the body the plumage is of an uniform light grey; the under side is pure white, and a broad black stripe passes across the eyes. The upper half of the large primary quills, as well as the inner webs and tips of the secondaries, are white, their other portions and the rest of the quills being black; the centre tail-feathers are black, but with the exception of a large black spot upon the centre of the inner web of the fifth, and a black streak upon the shaft of the exterior feather, the rest are entirely white. The eye is brown, the beak black, and the foot dark grey; the plumage of the female is less pure in its coloration than that of her mate: the young are recognisable by the wave-like markings upon the breast and other parts of the body. The egg is shown at Fig. 3, Coloured Plate XVI.

This species of Shrike is found in almost every European country, and throughout a large part of Asia and Northern Africa; it is also very numerous in North America. Everywhere it appears to prefer woodland districts, but is nevertheless constantly met with both in mountain ranges and in marshy plains. Whilst on the alert for prey it may usually be seen upon the topmost branches of a tree, peering eagerly about in all directions, in the hope of detecting any small bird or mouse that may be near, pouncing down and killing it with wonderful dexterity as soon as the proper moment arrives. If the destroyer is hungry the prey is at once dragged away and devoured; but should this not be the case, the body is impaled upon a thorn, and left for a future meal. Even when tame it continues this habit, and has been known to make constant use of a spike driven into a wall for that purpose by its owner.

"We have seen," says one writer, "the New Holland Butcher Bird (*Vanga destructor*) act in this manner when in captivity, and after strangling a mouse or crushing its skull, double it through the wires of its cage, and, with every demonstration of savage triumph, tear it limb from limb and devour it. The bird to which we allude had the talent of imitation in great perfection, and had learnt to sing several bars of airs, with a full-toned musical voice. It executed the first part of 'Over the Water to Charlie' with a spirit that would have gone to the heart of an old Jacobite." The term *Excubitor* or Sentinel was given to the Butcher Bird by Linnæus, from its vigilance in watching against Hawks and other birds of that tribe, whose approach it is ever the first to perceive, uttering at the same time a querulous chattering, indicative, no doubt, of fear and dislike; hence on the Continent it is used by persons engaged in the capture of the Peregrine Falcon.

The flight of this Shrike is slow and undulating, and can rarely be sustained for more than a few minutes at a time; even when merely passing from one tree to another the bird moves in undulating lines, keeping near the ground, and rapidly agitating both its wings and tail. Its sight is excellent, and its sense of hearing so delicate as at once to detect the slightest sound. In disposition it is bold, courageous, and very quarrelsome; during the breeding season it lives peaceably with its mate, but after that period each individual provides only for itself, and carries on an incessant warfare, not only with other birds, but with its own race. The notes of the Excubitor vary considerably at different times of the year; in the spring both sexes possess an actual song, which seems to reproduce the sounds uttered by all their feathered companions. The period of incubation commences in April, and both parents assist in the formation of the nest, which is artistically constructed of twigs, straws, and grass, its round interior being lined with wool, hay, and hair. The eggs, from four to seven in number, are greenish grey, spotted with brown or dark grey, and are hatched in about a fortnight. The nestlings are fed at first upon beetles, grasshoppers, and other insects, but at a later period on small birds and mice. Both parents defend the little family with the utmost courage, and continue their care and instructions until the season for migration. When aged, this species of Shrike soon becomes very tame, and easily learns to obey and recognise its master. In former times it was trained for the chase.

THE SOUTHERN SHRIKE.

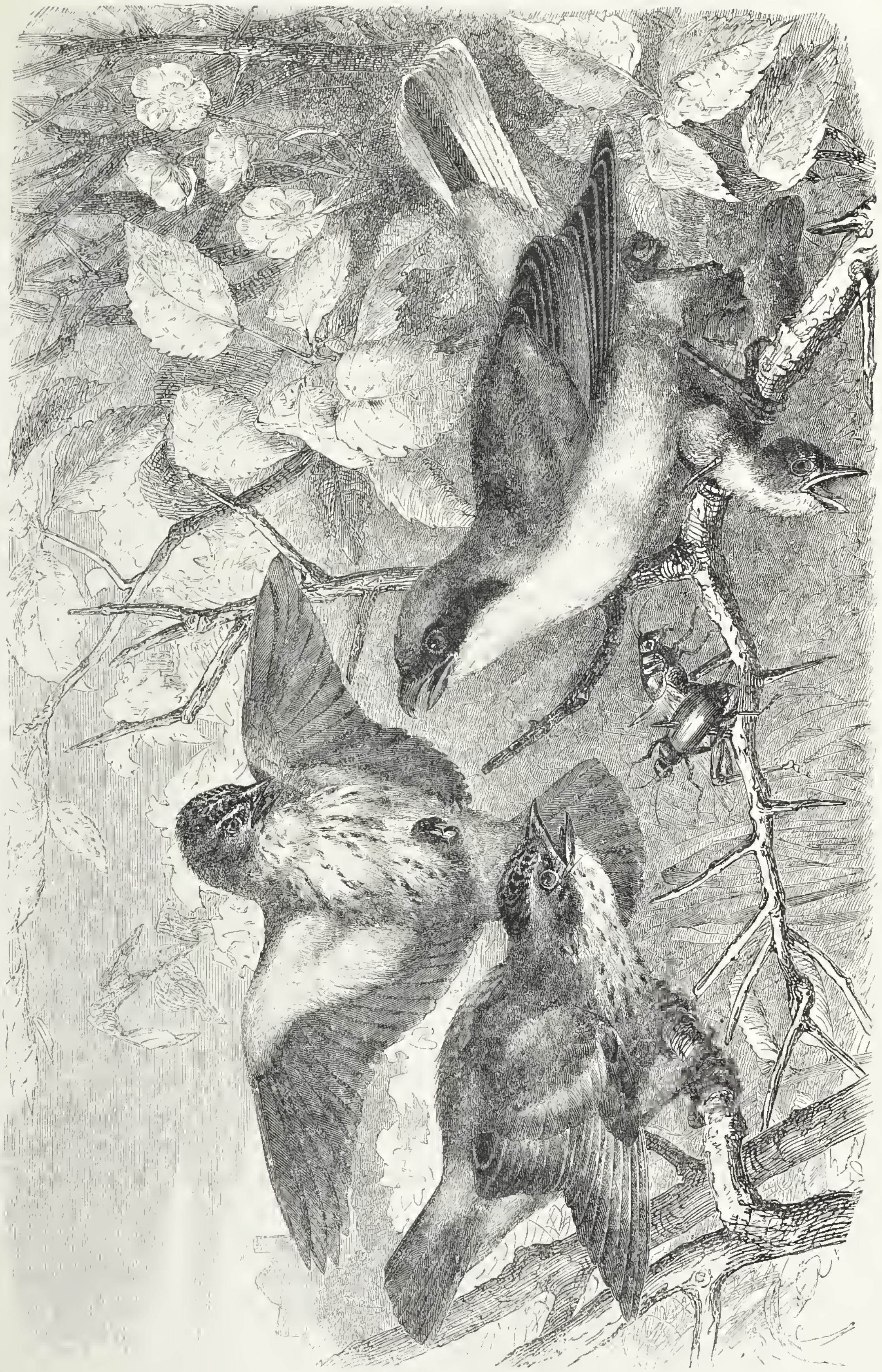
The Southern Shrike (*Lanius meridionalis*) is very similar to, but more beautiful than the species above described, and is found throughout Southern Europe and North-western Africa; the male is about ten inches long and thirteen broad; the wing measures more than four inches, and the tail four and three-quarters; the female is half an inch smaller than her mate. The plumage is deep grey upon the upper part of the body, and white beneath, the breast being shaded with a rich red; the four centre tail-feathers are black, the eye is brown, the upper mandible dark, and the lower one light blue; the foot is black.

This bird is, we believe, the only Shrike that remains throughout the year in Spain; it arrives in Greece about April, and leaves again in the end of August. Its habits do not differ from those of its congeners already alluded to. The nest, which is usually placed at the summit of an olive-tree, is formed of green stalks, woven together, and lined with sheep's wool and goats' hair; the eggs, four or six in number, are of a dirty white or reddish white, thickly strewn with brown, grey, or red spots of various sizes. These eggs are regarded as such dainties in Spain, that men will often risk their lives in procuring them for the market.

THE GREY, OR BLACK-BROWED SHRIKE.

The Grey, or Black-browed Shrike (*Lanius minor*), is a beautiful species, from seven and a half to eight inches broad, and thirteen and a half to fourteen inches long. The upper part of the body is light grey, the under side quite white, with the exception of the breast, which is slightly tinged with pink; the brow and cheek-stripes are black, the base of the quills is white, and the remaining portion black; the four centre tail-feathers are black, the next in order white upon the lower half, with a dark spot upon the inner web, whilst those at the exterior are entirely pure white. The eye is brown, the beak black, and the foot grey. The female is exactly like her mate; but the young are dirty white upon the brow, and yellowish white, striped with grey, upon the under surface. The Black-browed Shrike is common in some parts of Europe, especially in Bavaria, Brandenburgh, the south of France, Italy, and Turkey; but is quite unknown or rarely seen in most other parts of the Continent. During its migrations it visits Central Africa; we ourselves have seen it in the Nile provinces as early as September, and have never observed it in Europe before May. According to Naumann, this species is by far the most lively and harmless member of its family; its flight is light and graceful, and its capacity for imitating the voice of almost any other bird unusually great. Its food consists exclusively of beetles, butterflies, grasshoppers, and other insects; it also devours larvæ and chrysalids in large quantities. When in pursuit of prey it shows great agility, and usually watches its victims in the same manner as its congeners; but, unlike them, it does not transfix its booty upon thorns previous to devouring it. The nest, formed of hay, straw, wool, hair, and feathers, is placed at the summit of a tree; the eggs, six or seven in number, are greenish white, marked with brownish or violet-grey spots and streaks. Both male and female co-operate in the work of incubation; the young are hatched within a fortnight; they are reared upon insects, and defended with much courage by their parents, who chase every feathered intruder to a distance, and will even venture down to confront a man, should he approach too near the little family. Large numbers, however, in spite of all their efforts, are destroyed by Hawks, Crows, and other formidable neighbours.

THE SENTINEL BUTCHER BIRD (*Lanius Excubitor*).



BUTCHER BIRD AND FLY-CATCHERS.

The BUTCHER BIRDS PROPER (*Enneoctonus*) are very easily distinguishable from the above-mentioned groups by their short, strong, and slightly hooked beak, and by the variety of plumage observable in the male and female. This group contains two distinct species, of which we are about to describe the most generally known.

THE RED-BACKED SHRIKE, OR TRUE BUTCHER BIRD.

The RED-BACKED SHRIKE, or TRUE BUTCHER BIRD (*Enneoctonus-Lanius-collurio*), is light grey upon the head, nape, and wings; the mantle is reddish brown; the breast pale rose-pink; a black stripe passes above and beneath the eyes; the quills are of a brownish greyish black, with a light border; the base of each of the secondaries is decorated with a small spot, which, when the wing is extended, combine and form a well-defined line; the centre tail-feathers are brownish black; those next in order are white at the roots, whilst the exterior ones are almost entirely white, and tipped with black. The eye is brown, the beak black, and the foot greyish black. The female differs considerably from the male, her body being reddish grey above and of a whitish tint beneath, marked with undulating brown lines. The young resemble the father, but are spotted slightly upon the back. (See Coloured Plate XIV.) The length of this species is seven inches, and its breadth eleven and a half.

The Butcher Bird is met with in most countries of Europe, from Scandinavia, Russia, and some parts of Siberia, to the south of France and Greece. During its winter migrations it visits the forests of North-eastern Africa, and does not return to Europe until late in the spring. Trees and bushes are the situations it prefers when about to build, and it often makes its nest for years on the same spot, but should it be disturbed, it at once leaves not only the tree but the neighbourhood. In its habits it closely resembles other Shrikes, and in like manner consumes large quantities of insects. The Butcher Bird, however, often continues to kill, long after it has satisfied the cravings of hunger, and pursues small quadrupeds or birds so incessantly as to drive away or destroy all such as have been unfortunate enough to make their homes in its vicinity. This species is constantly in the habit of impaling its captives after they are dead upon thorns, and it is not uncommon to see the bodies of many victims thus secured until their destroyer has recovered his appetite: Naumann tells us that the brain appears to be regarded as the greatest delicacy, and is always eaten fresh. Should a Butcher Bird be disturbed whilst making its meal, it at once takes flight, and does not return.

The nest, which is usually placed in a thorn bush, at no great distance from the ground, is large, thick, and carefully constructed of straw, hay, or moss, woven firmly and neatly together, and lined with delicate fibres or similar materials. The female, who broods but once in the year, lays five or six eggs (Fig. 4, Plate XVI.), of various sizes, shapes, and colours, more or less resembling those of other Shrikes; she alone performs the work of incubation, sitting on her nest with such devotion and care that she will allow herself to be captured rather than quit her post.

The Butcher Bird will frequently live for several years in captivity, and cannot fail to become a favourite, by reason of its wonderful power of imitating not only the voices of its feathered companions, but other sounds, for instance, such as the barking of a dog.

THE RED-HEADED SHRIKE, OR WOOD CHAT.

The RED-HEADED SHRIKE (*Enneoctonus-Phoneus-rufus*), or WOOD CHAT, as it is sometimes called, is seven inches long and eleven broad; the wing measures three and a half and the tail three inches. In the male, the upper portion of the body is black, the under surface yellowish white, the back of the head and nape are reddish brown, and the shoulders and rump white. The female resembles her mate. The plumage of the young is brownish grey, marked with crescent-shaped black spots; the wings and tail are brown; the eyes are dark brown; the beak blueish black, and the feet deep grey.

The Red-headed Shrike is very numerously met with in Southern Europe, where it not only frequents woodland districts, but settles in the immediate vicinity of houses. As winter approaches it leaves for warmer latitudes, and is very commonly seen in the forests of Central Africa, shortly after the rainy season. In its mode of life this species resembles the Butcher Bird, but it subsists principally upon insects, and only destroys small quadrupeds or birds when compelled to do so through lack of other food. The nest is placed upon a tree, and constructed of dry stalks or green plants, the interior being lined with moss and delicate fibres, feathers, hair, and wool. The five or six eggs that constitute a brood are laid in May; these have a greenish white shell, spotted with dark grey or brown. When caged, the Red-headed Shrike soon becomes an attractive companion, owing to its great facility for imitating the voice of almost any bird that it may hear.

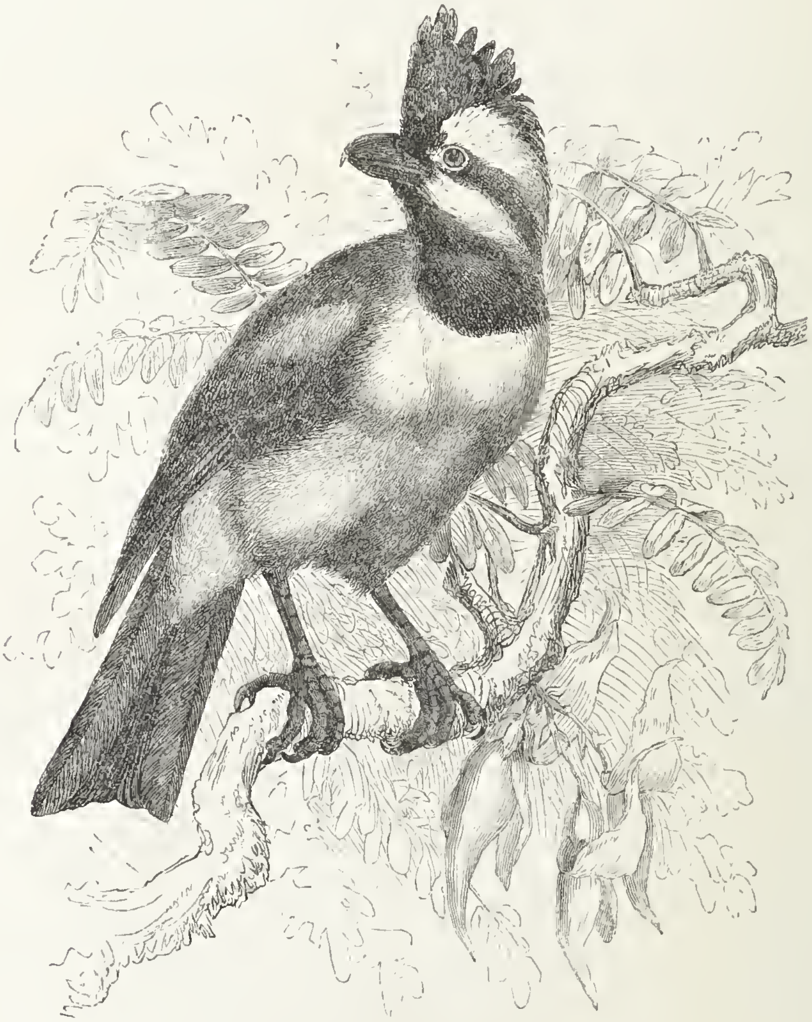
THE MASKED SHRIKE.

The Masked Shrike (*Enneoctonus personatus*) is of a blueish black upon the upper parts of the body; the breast is reddish yellow; the brow, shoulders, throat, and rump are white; the six centre tail-feathers are entirely black, and the two outer ones pure white, with a black shaft; the rest are a mixture of black and white. The eye is brown, the beak and feet black. This species, according to Lindmayer, appears in Greece at the beginning of May, and leaves again in the middle of August. It is also met with in large numbers in Egypt and Nubia, remaining in the latter countries throughout the entire year; whilst such individuals as migrate from Europe penetrate as far as the interior of Africa, and remain there during the winter season. Unlike other members of its family, it perches upon lofty trees, from the summit of which its clear but monotonous voice is constantly to be heard. The nest, which is small and delicately constructed, usually contains six or seven eggs of a yellow hue, spotted with yellowish brown. This species subsists entirely upon insect diet.

The THICK-HEADED SHRIKES (*Pachycephali*) are recognisable by their compact body, powerful head, strong beak, short wings and tail, and powerful feet. All the species belonging to this group are met with in New Holland and the islands of the Pacific, where they perch upon the summits of lofty trees, and climb about among the branches, with the alacrity of Titmice. Insects constitute their principal nourishment; they also devour large quantities of caterpillars and worms. Their movements are slow and their gait heavy. Their song varies according to the species, some having loud but agreeable voices, whilst others utter a prolonged piping note, varied and repeated in a very peculiar manner. The nest is round, beautifully constructed, and generally placed upon the branches or in a hole of some tree; it usually contains four eggs.

THE FALCON SHRIKE.

The Falcon Shrike (*Falcunculus frontatus*), a member of the group above described, is a powerfully-formed and prettily-marked bird of about six inches in length: the beak resembles that of a Falcon, but neither the hook nor tooth-like appendages are well developed. In both sexes the mantle is olive-green, and the under surface bright yellow; the sides of the head are white, and marked by a broad black line that passes from the nape across the eyes and over the brow; the crest and throat are black; the exterior and secondary quills blackish brown, broadly bordered with grey; the tail is similarly coloured, but tipped with white. The eye is reddish brown; the beak black, and the foot blueish grey. The female is smaller than her mate, and of a brighter hue upon the throat. We learn from Gould that this bird is found in New South Wales and Australia, where it alike frequents thick bushes and such trees as grow upon the open plains; it subsists chiefly upon insects, which are obtained among the foliage or under the bark of the larger branches, or trunks of the trees. In procuring these it displays great dexterity, stripping off the bark in the most determined manner, for which purpose its powerful bill is most admirably adapted. The same author says, "It is very animated and sprightly in its actions, and in its habits closely resembles the Tits, particularly in the manner in which it clings to and climbs among the branches in search of food. While thus employed it frequently erects its crest, and assumes many pert and lively positions. No bird of the same size, with which I am acquainted, possesses greater strength in its mandibles, or is capable of inflicting severer wounds, as I experienced on handling one I had previously winged, and which fastened on my hand in the most ferocious manner. As far as I am aware, the *Falcunculus frontatus* is not distinguished by any powers of song; it merely utters a few low, piping notes. I could neither succeed in securing the nest of this species, nor obtain any authentic information respecting its nidification." The stomachs of the specimens dissected by Gould were filled with the larvæ of insects and berries.



THE FALCON SHRIKE (*Falcunculus frontatus*).

The BUSH SHRIKES (*Malaconoti*) constitute a numerous group, inhabiting Africa and India. These birds are distinguishable by their comparative length of wing and shortness of tail; the formation of the latter varies considerably in different species. The beak is long, slender, and but slightly curved or incised; the tarsus high and weak. The thick plumage is brilliant in its hues, and unusually developed on the lower portions of the body. All the members of this family live either in pairs or small parties, amidst the leafy tops of forest-trees, or in such districts as are covered with a thick growth of brushwood. They feed exclusively on insects, but with this exception we are almost entirely without particulars as to their habits or mode of incubation.

THE FLUTE SHRIKE (*Laniarius Æthiopicus*).

The FLUTE-VOICED SHRIKES (*Laniarius*) are recognisable by their elongate body, short neck, head of medium size, and moderately long wing, in which the fourth or fifth quills exceed the rest in length. The rather long tail is rounded at its extremity; the beak is long, very decidedly hooked, and but slightly incised. The tarsus is high, the toes powerful, and armed with formidable claws.

THE SCARLET SHRIKE.

The SCARLET SHRIKE (*Laniarius erythrogaster*), a species inhabiting Eastern Africa, and replaced in the western and southern portions of that continent by a somewhat similar species (the

Laniarius barbarus), is of an uniform glossy black on the upper portion of the body; the under side, with the exception of the brownish yellow hump, is of a brilliant scarlet; the eye is yellow, beak black, and foot lead-grey. The length of this bird is nine, and its breadth thirteen inches; the wing measures four and the tail three inches and a half. The plumage of the *Laniarius barbarus* is exactly similar, if we except a dull yellow patch upon the top of its head.

THE FLUTE SHRIKE.

The FLUTE SHRIKE (*Laniarius Æthiopicus*) is entirely black upon the upper parts of the body, except a white line upon the wings; the under side is pure white, shaded here and there with rose-red; the eye is reddish brown, the beak black, and the foot blueish grey. The length of its body is nine and a half, and breadth twelve inches and one-third; the wing measures four, and the tail three and three-quarter inches.

Like other members of this group the two species above described lead a very retired life among the sheltering branches of their favourite trees, from whence their most strange and very monotonous song is to be heard almost incessantly throughout the day.

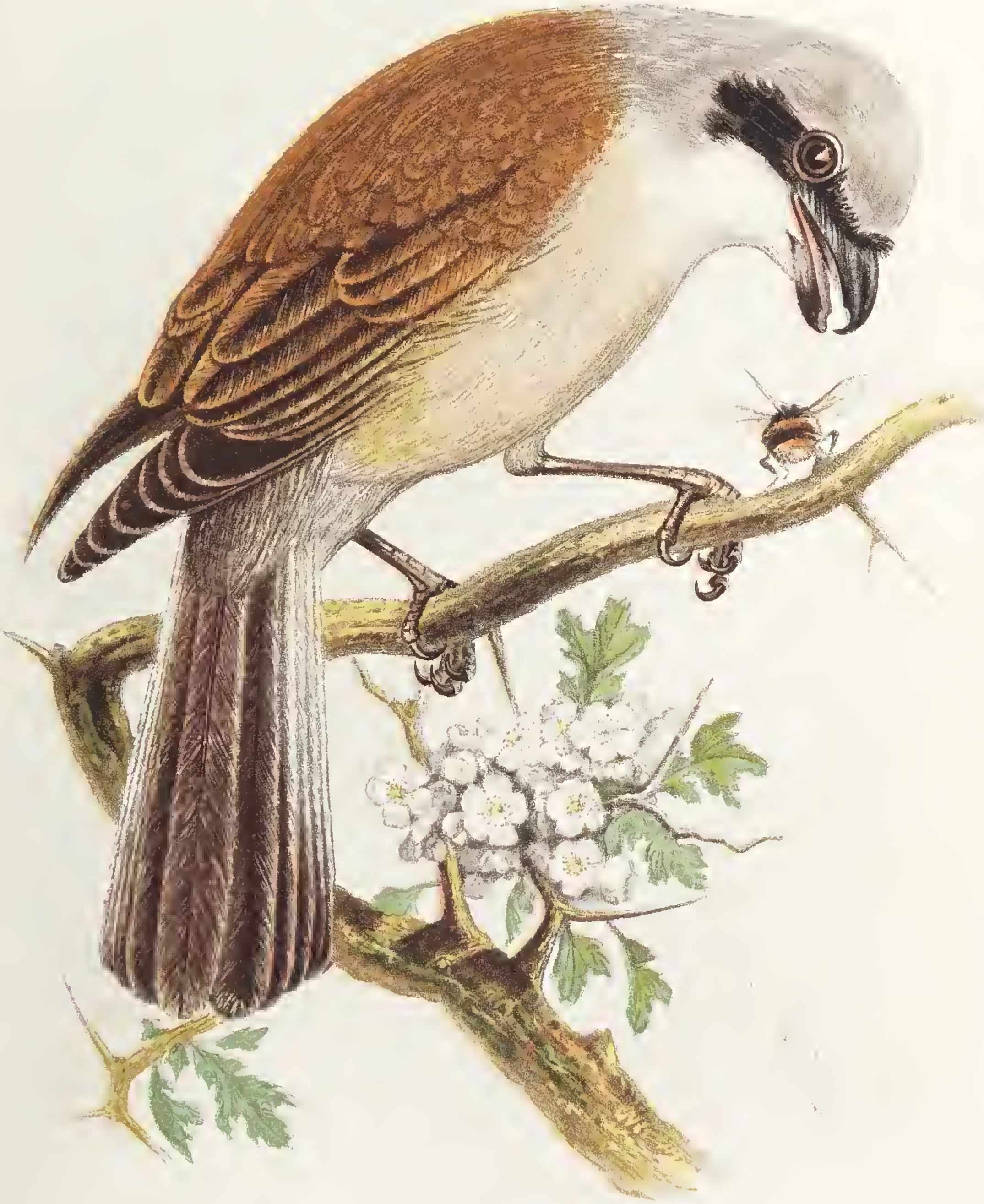
The HOODED SHRIKES are easily distinguishable from the last-mentioned group by their comparatively long, graduated tails, short wings, in which the fourth quill exceeds the rest in length, and remarkably long tarsi.

It is at present uncertain if all the species of Shrikes inhabiting Western and Eastern Africa can be included in this group. The coloration of their plumage is almost identical, and in their habits they closely resemble each other, but considerable variety is observable in their size. All make their homes amidst such thick brushwood as grows close to the ground, and they never seek the shelter of the trees except when very closely pursued. If driven from their favourite lurking-places amongst the bushes and long grass, they fly with rapid strokes of the wing to the nearest shelter, keeping close to the earth as they hurry along, but occasionally hovering for a few moments before concealing themselves. Whilst in search of insects, they run upon the ground with a rapidity and ease far exceeding the powers of any other members of their family.

Except the facts that these birds associate in small parties during the period of incubation, and live alone or in pairs at other seasons, we are without particulars as to their nidification and breeding, and have been unable personally to observe their habits.

THE TSCHAGRA.

The TSCHAGRA (*Telephonus erythropterus*)—the species we have selected for description—is brownish grey upon the upper part of the body, and light grey beneath. A broad black line passes over the head, and another, somewhat narrower, crosses the region of the eye. These lines are separated by a light streak, which is white upon the face, but becomes of a yellow tinge towards the sides. The outer web of the quills is grey, but is so broadly bordered with reddish brown that when the wings are closed they appear to be almost entirely of the latter hue. The upper secondaries are edged with reddish grey; the two centre tail-feathers are grey, marked with dark stripes; the rest are black, tipped with white, those of the exterior have also a light border to the outer web. The eye is reddish brown, the beak black, and the feet lead-colour, with a greenish shade. In length the Tschagra does not exceed eight inches, its breadth is ten inches, the wing measures three inches and the tail three and a half. It is, at present, uncertain whether the very similar birds inhabiting Eastern and Western Africa are identical with this species. In colour they are closely alike, but differ somewhat in size.



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RED BACKED SHRIKE. Lanius collurio.

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THE HELMET SHRIKE.

The HELMET SHRIKE (*Prionops poliocephalus* or *Prionops cristatus*) is easily recognisable by the remarkable plume, composed of stiff, hairy feathers, with which the head is decorated. Some of these hairy feathers cover the nostrils and base of the beak, and incline forwards, whilst the rest rise directly from the top of the head, and combining, form a crest that in shape resembles the upper part of a helmet. The eyelids are brightly coloured, and in texture similar to the cere with which our readers have become familiar in the Raptores. The wings, in which the third quill exceeds the rest in length, although of considerable size, do not cover more than a third of the very long and rounded tail; the tarsi are short, and the toes long. The plumage is soft, thick, and very simply coloured; the mantle-quills and a large portion of the tail are black; the crest, head, nape, and entire under surface white. An indistinct yellowish line passes over the back of the head. The inner web and tips of the primary quills, the tips of the secondaries and the exterior tail-feathers are white; the rest are tinted with a mixture of black and white, in which the former predominates. The eye is pearl-grey, and its lid bright orange, the feet cinnabar-red, and the beak black. Heuglin tells us that the crest of the young bird is short, and shaded with grey. The length of this species is eight and its breadth thirteen inches; the wing measures four inches and a half and the tail thirteen and a half. Rüppell found large flocks of Helmet Shrikes inhabiting the valleys on the Abyssinian coast, where they lived, like their congeners, in low bushes, and subsisted upon insects. Nevertheless, this writer states that he never saw them again in his travels through other parts of that country. We ourselves were, on one occasion, fortunate enough to see a considerable party of these remarkable-looking birds in the forests near the Blue Nile. Such slight observations as we were able to make would seem to indicate that their mode of life is very similar to that of the last-mentioned group. Heuglin only met with this species during the rainy season, and therefore concludes that it is of migratory habits.

The RAVEN SHRIKES (*Thamnophili*) constitute a very peculiar group inhabiting South America, Africa, and New Holland, closely allied to the Shrikes, though differing from them in so many particulars that ornithologists are as yet at variance respecting their classification, founding their difference of opinion upon the peculiar construction of the singing apparatus observable in some species. These birds are for the most part of moderate size, with powerfully constructed bodies; their wings are either of medium length, or short and much rounded, whilst the tail is subject to many varieties of form; the tarsi, which are usually long and slender, always exceed the centre toe in length, this latter is united with the exterior toe as far as the first joint, whilst on the inner side the toes are entirely unconnected. The elongate beak, which is always more or less straight at its culmen, curves abruptly towards its tip, where it exhibits tooth-like appendages. The margins of the bill are sharp and compressed; the plumage of some species is rich, soft, and in many instances striking in appearance, owing to the long and almost wool-like feathers upon the back; the base of the beak is usually surrounded by a growth of bristles.

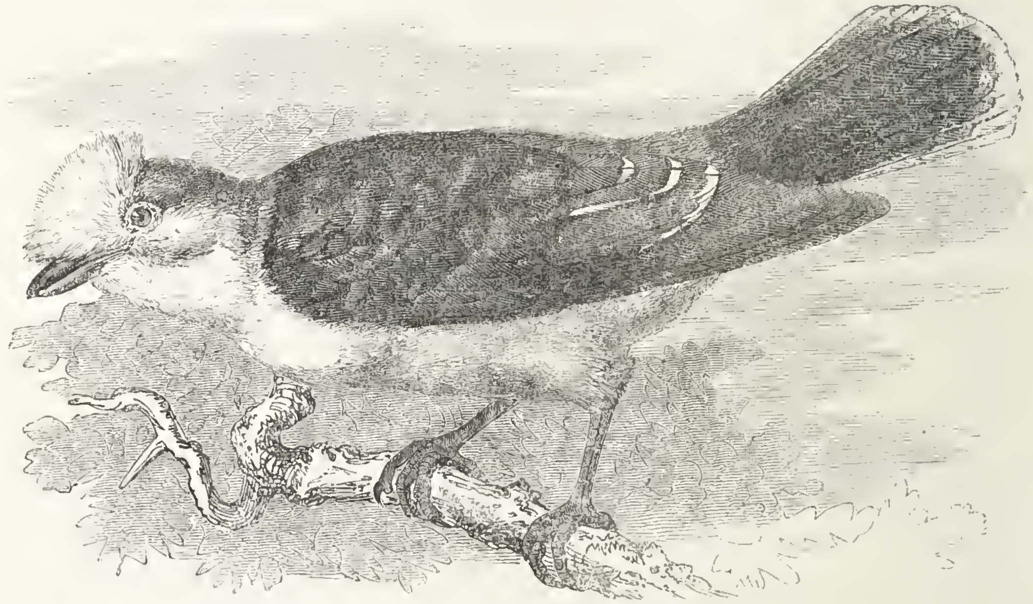
We are entirely without particulars as to the life and habits of several members of this group, and must therefore avoid any *general* description.

The CROW SHRIKES (*Cracticus*), according to Gould, who first described them, closely resemble the Piping Crows in appearance.

THE MAGPIE SHRIKE.

The MAGPIE SHRIKE (*Cracticus destructor*), the most numerous representative of this section, is of a deep greyish brown upon the upper part of the body; the wings are blackish brown; the top of the head and nape black; the rump is white, the under side greyish white, and a white spot lies between the eyes and the base of the beak. The quills are blackish brown, with a white edge to the outer web of the secondaries; the tail-feathers are black, and, except the two centre ones, are tipped with white. The eye is dark reddish brown; the beak is grey at its base, and black towards the tip; the feet are deep grey. The female has darker markings than her mate, and the young are spotted with brown and reddish yellow. The length of this species is about thirteen inches and a half.

Gould tells us that the Magpie Shrikes are found extensively throughout Australia, where they inhabit the brushwood extending from the coast to the mountain tracts; and, despite their habit of perching almost motionless on the branches whilst on the watch for prey, their presence is speedily announced to the traveller by the constant repetition of their extraordinarily harsh and unpleasing cry. The larger kinds of insects or small birds constitute their principal food; upon these they dart with direct aim, and after killing their prey, return with it to the perch they have just quitted, usually spitting the victim upon a thorn or pointed twig, after the manner of the Butcher Bird, before devouring it. Gould tells us that this species is very daring, even when brought in contact with man, and mentions an instance in which he was followed for more than an hour by a hungry Magpie Shrike, it having discovered that a small bird was imprisoned in his hunting-pouch. The breeding season commences in September; the nest is large, and neatly constructed of fine twigs, lined with small shoots and delicate fibres. The brood consists of four eggs, with a deep yellowish brown shell, marked with dark spots and tracings of various shades, which frequently take the form of a wreath at the broad end.

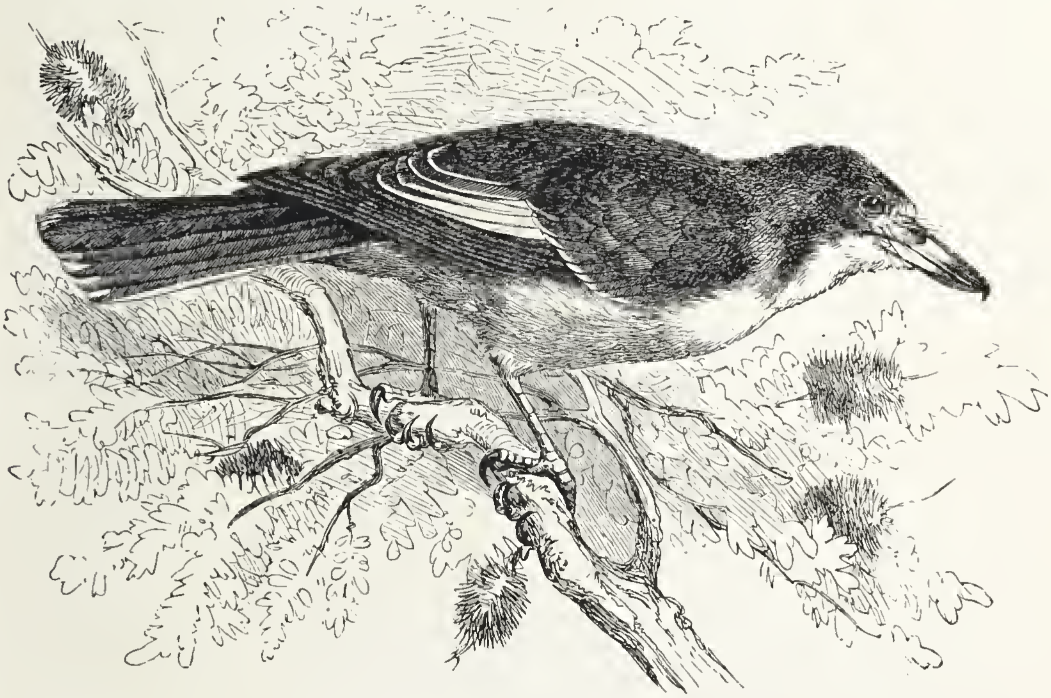


THE HELMET SHRIKE (*Prionops poliocephalus*).

The RAVEN SHRIKES (*Thamnophilus*) appear to combine all the peculiarities exhibited by the various members of this group, and in some respects resemble the Jay in appearance. These birds are recognisable by their powerful body and rounded wings, in which the third and fourth quills exceed the rest in length; the tail is long, composed of broad feathers, abruptly graduated at its sides, and rounded at its extremity. The beak is high, compressed at the sides, and rounded at the culmen; the upper mandible terminates suddenly in a large hook. The foot is muscular, the tarsus thick and of moderate length, the long fleshy toes are armed with large hooked claws, that of the hinder toe considerably exceeding the rest in size. The plumage is composed of broad feathers, and thus appears thick and rich in texture; the region of the beak is surrounded by a slight growth of bristles.

VIGORS' RAVEN SHRIKE.

VIGORS' RAVEN SHRIKE (*Thamnophilus undulatus* or *Thamnophilus Vigorsii*) is a large bird about fourteen inches long; its wing measures five and its tail six inches. The plumage of the male is entirely black upon the upper side, streaked with white upon the back, wings, and tail; the lower parts of the body are of an uniform dark grey, somewhat paler upon the throat. The female is almost exclusively yellowish brown, the top of the head being blackish brown, and the back, wings, and tail striped alternately with black and reddish yellow. Burmeister found the Bush Shrike inhabiting the wooded highlands of Rio de Janeiro and Santo Paulo, occasionally in the vicinity of the towns and villages. Such as he observed hopped about amongst the branches at some distance from the ground, repeatedly uttering their monotonous cry. They exhibited no fear of molestation, and would allow a sportsman to approach quite close, even if armed with his gun.



THE MAGPIE SHRIKE (*Cracticus destructor*).

We are somewhat better informed as to the habits of the species of Bush Shrikes mentioned by Azara and the Prince von Wied. These are described as resembling both the Shrikes and the Ant Thrushes (*Pitta*) in form and general appearance. All lead a retired life amidst the bushy foliage of their native forests, and usually prefer the darkest and most secluded localities, seldom quitting these retreats except when flying from one bush to another. The larger species are occasionally met with in the open country, but there, as elsewhere, they keep within the shelter of the brushwood, and only leave their favourite haunts for a few minutes morning and evening. Towards other birds they exhibit little sociability, but are much attached to their mates, each couple keeping together throughout their lives. The voice of the various species is so very similar as to render it almost impossible to distinguish the one from the other by the ear alone. The Prince von Wied describes their cry as resembling the sound produced by the rebound of a ball from a stone or other hard body, followed by a deep bass note. In some few instances the call is perfectly monotonous. The Bush Shrikes subsist almost exclusively upon insects, but they also destroy small reptiles and young birds. The nest, which is carelessly formed of blades of grass and moss, lined with feathers, is concealed so cunningly as to render its discovery difficult, even by the sharp-eyed natives. The eggs are laid about December; they are of a dirty yellow colour, marked with a wreath of olive-brown spots at the broad end.

The DRONGO SHRIKES (*Edolii*) constitute a family of birds found extensively throughout Africa, Southern Asia, and New Holland; they appear to form the connecting link between the Shrikes and the Fly-catchers. All the various members of this family have slender bodies, long wings and tails, broad beaks, and short feet. The fourth and fifth wing-quills exceed the rest in length; the tail is composed of ten feathers, and is more or less deeply forked at its extremity. The large thick beak is surrounded with bristles at its broad base; the slightly-curved upper mandible is incised at its edges and terminates in a hook; the tarsi are short, the feet small but muscular, and armed with strong claws. The plumage is dark-coloured, thick, harsh, and possesses a very peculiar gloss. Most species are black, others blue, and some few light or deep blue upon the back and whitish beneath; the eye is always bright red, and the beak and feet black. All the members of this family are very similar in their habits and mode of life.

THE KING CROW, OR FINGA.

The KING CROW, or FINGA of Bengal (*Dicrourus macrocercus*), is one of the most remarkable and most numerous of the many species inhabiting India. Its length is about twelve and its breadth sixteen inches; the wing measures five inches and three-quarters, and the tail about six inches. In this bird the entire body is of a resplendent black, deepest in shade upon the wings and tail; the under portions are brownish black; the region of the nape is decorated with a white spot. The sexes are alike in colour, and the young are readily distinguished from their parents by white crescent-shaped spots upon the feathers that cover the under surface. The nest is composed of grass, twigs, and roots carefully put together, and contains from three to five eggs of a white colour, with pale brown or purplish spots.

The Finga is found throughout the whole of India, Assam, and Burmah, as far as China, occupying almost every locality except the densest parts of the jungle. An almost identical but larger bird is met with in Ceylon. We are also acquainted with four other Indian varieties, and several very similar species inhabit Africa and Australia.

The DRONGOS (*Chaptia*) are recognisable from the last-mentioned group by their more delicate feet and less decidedly pointed tails.

THE SINGING DRONGO.

The SINGING DRONGO (*Chaptia musica*) is nine inches long; its wing and tail both measure four inches and a half. The plumage is of a blueish black, enlivened by a most brilliant gloss; the wing and tail-feathers are black; the belly and lower wing-covers dark grey, approaching to black.

Le Vaillant discovered this bird in South-eastern Africa, and more recent travellers have seen it in the northern parts of that continent. India possesses a very similar species, which, however, unlike the rest of the group, frequently inhabits dense thickets.

The FLAG-BEARING DRONGOS (*Edolius* or *Dissemurus*) constitute a group of still more striking birds, with tails in which the exterior feathers are more than twice the length of those in the centre. The lower half of these outer feathers is entirely without web, while at the tip the web is broad at the outer and very narrow on the inner side, so as somewhat to resemble a flag. The beak is comparatively long and powerful, slightly compressed at its base and much curved at the culmen, hooked at the tip, and furnished with teeth-like appendages; the base of the beak is surrounded with thick soft bristles.

THE BEE KING.

The BEE KING of the Indians (*Edolius paradiseus*) is fourteen inches long; the outer tail-feathers are eighteen or nineteen inches in length, while those in the centre do not exceed six inches and a half; the wing measures six inches and three-quarters. The rich plumage is of an uniform black, with a blue metallic gloss. The feathers upon the fore part of the head are prolonged into a crest, and, like those upon the nape and breast, are slightly incised at their extremities.

The DRONGO SHRIKES are met with in large numbers throughout the whole of India, even to an altitude of 8,000 feet, and may constantly be seen sitting upon the house-tops or telegraph-posts in the immediate vicinity of man, or perching fearlessly on the backs of the sheep as they wander about the fields and pastures. Some few species seek for food during the night, and carry on the chase in parties, which assemble on a favourite tree shortly after sunset; others, again, are active throughout the entire day, and though they do not hunt for prey after evening has closed in, may frequently be heard uttering their loud, harsh, monotonous cry should the night be fine and moonlit. During the breeding season each pair lives entirely apart from the rest, and permits no intruder to approach the nest.

We learn from Le Vaillant, Blyth, and others, that the Drongos are in many respects highly endowed, their instincts acute, their various senses well developed, and their movements through the air distinguished by great lightness and activity. So acute is their vision that, like the Swallow, they dart upon a flying insect from a considerable distance with a rapidity that renders escape almost impossible, and, as we have said, readily destroy their game even in the twilight. Except when engaged in seeking food, they rarely come to the ground; indeed, they seem to have considerable difficulty in using their delicate feet, even whilst in the trees, merely employing them as a means of clinging to the branches, and appearing quite incapable of hopping from one twig to another with anything like a sprightly motion. Such acts as bathing or drinking are carried on, as in the case of the Swallow, whilst the birds are upon the wing. All the members of this group are lively, noisy, and active. They exhibit the utmost courage in defending their mates and nestlings from danger, several individuals often combining together to drive away a common foe. They constantly attack Owls with great spirit, and Gurney tells us that they frequently endeavour to battle with the larger birds of prey. So violent are they during the season for choosing a mate, that Jerdon mentions having seen four or five of these desperate rivals rolling together upon the ground, as they fought in a paroxysm of rage and jealousy. All the various tribes of Drongos appear to subsist exclusively upon insects, more particularly upon bees and wasps; some large species also devour grasshoppers, dragon-flies, and butterflies, but, like their smaller brethren, prefer such insects as are furnished with stings, thus often rendering themselves extremely troublesome to the owners of bees. At the Cape of Good Hope they are know under the name of "Bee-eaters." Le Vaillant tells us that they seem to know exactly at what hour the heavily-laden insects return to their hives, and adroitly relieve them of their burdens, strewing the ground with the wings and bodies of the victims. We learn from Gurney that they are often attracted by the smoke from the conflagrations that occasionally burst forth upon the arid plains of their native lands, for they know well that the devouring flames will drive forth a host of insects, and thus afford a rich and abundant supply of food. Philipps mentions an amusing instance of the cunning displayed by some of these birds whilst engaged in the pursuit of a meal. Upon one occasion, he tells us, he saw a locust closely pursued by a bird that was almost near enough to seize it, when an observant Drongo, having espied the tempting morsel, and finding it impossible to reach the spot in time, suddenly uttered the cry of terror usually employed to signal the approach of a Hawk; the ruse succeeded; the other bird instantly darted away to seek safe shelter, leaving the wily Drongo in undisturbed possession of the coveted booty.

The season of the year at which the incubation of these birds takes place is somewhat uncertain, and naturalists differ very considerably in their opinions on this point. According to our own observations and experience, they breed but once in the year. The nest, like that of the Pirol, is suspended between two branches at some distance from the ground, and so placed as to be fully exposed to all the changes of wind and weather; nevertheless, the exterior is very carelessly formed of twigs and fibres, and has no lining except at most a few coarse hairs. The eggs, three or four in number, have a white or reddish white shell, spotted with brown or red. Many species of the Drongo are caught and reared; the Bee-eater in particular is very commonly seen in the houses in Calcutta and other Indian cities. Blyth tells us that it is readily tamed, and soon becomes a most amusing companion, from the power it possesses of imitating not only the voices of other birds, which it does so exactly as to deceive their mates, but also any sound it hears.

The SWALLOW SHRIKES (*Artami*) constitute a family of strangely-formed birds, that inhabit New Holland, India, and the Malay Islands. Their muscular bodies are furnished with very long wings, in which the second quill is longer than the rest. Their short or moderate-sized tails are either quite straight or slightly incised at the extremity. The beak is short, almost conical, rounded at the sides, the upper mandible slightly bent at the tip, and incised at the margins. The feet are strong, with short tarsi and toes, the latter armed with sharp and very hooked claws. The plumage is thick, and of a dusky hue.

THE WOOD SWALLOW SHRIKE.

The Wood Swallow Shrike (*Artamus sordidus*) is of a reddish grey upon the body; the tail and wings are dark blueish black, the third and fourth quill being edged with white upon the outer web. The tail-feathers, with the exception of the two in the centre, are broadly tipped with white. The eye is dark brown, the beak blue at its base and black at its tip; the feet are greyish white. The female is smaller than her mate, and presents a spotted appearance upon the back, the feathers on that part having a dirty white streak upon their shafts. The colour of the surface of the body is a mixture of white and brown. This bird is about six inches long and thirteen and a half broad.

The various species of Swallow Shrike, though differing slightly in some of their habits and in their mode of life, still bear so strong a family likeness to each other as will permit us to describe them collectively. All prefer woodland districts, and usually select localities in which their favourite trees abound. One species in particular is called by the natives the Palmyra Swallow, from the fact that it always seeks the shelter of the Palmyra palm. Such members of the family as inhabit Java select trees growing in open tracts, covered with short grass and brushwood; one of their favourite trees is then chosen as a sleeping-place or gathering-point, and from thence they fly over the surrounding country in search of food. Jerdon tells us that the fancy of the Swallow Shrike for certain trees is so strong that where these grow it is often found living at an altitude of 4,000 feet above the level of the sea. It is only in the air that these birds exhibit their full powers; and as they glide along, with outspread but almost motionless wings, their movements resemble those of some of the Raptores. Other species, on the contrary, exhibit all the rapidity and free evolution of the True Swallow, as they soar aloft or sink rapidly to the earth in pursuit of their tiny aërial victims. They but rarely descend to the ground, as their progress on foot is accomplished with some difficulty. Shortly after the breeding season enormous parties of Swallow Shrikes congregate upon the trees, where they live in the utmost harmony, each one satisfying its own wants, and carrying on the business of the day without either molesting or rendering assistance to its companions. A tree thus occupied is as full of life and bustle as a beehive, every part of its foliage affording a perch to one of these hungry and active birds, whose sharp eyes enable them instantly to detect and dart upon a passing insect, after which process they at once return to their former position on the tree. Gould tells us that these large flocks may often be seen hovering over a sheet of water, and literally darkening its surface by their numbers, as they dart about amidst the tempting hosts of insects that abound in such localities. We must not omit to mention one very striking peculiarity of the Wood Swallows. Gilbert tells us he has seen swarms of these birds, as large as a bushel measure, hanging like bees in large clusters from the branches of the trees. "This bird," says Gould, "besides being the commonest species of the genus, is a great favourite with the Australians, not only on account of its singular and pleasing actions, but by its often taking up its abode and incubating near the houses, particularly such as are surrounded by paddocks and open pasture-land, skirted by large trees. It was in such situations as these I first had the opportunity of observing this species; it is there very numerous in all the cleared estates on the south side of the Derwent, about eight or ten being seen on a single tree, crowding against one another on the same dead branch, but never in such numbers as to deserve the appellation of flocks. Each bird appeared to act independently of the other, each, as the desire for food prompted it, sallying forth from the branch to capture a passing insect, or to soar around the tree and return again to the same spot. On alighting it repeatedly throws one wing out at a time, and spreads its tail obliquely, previous to settling. At other times a few were seen perched on the fence surrounding the paddock, on which they frequently descended like Starlings, in search of coleoptera and other insects. It is not, however, in this state of comparative quiescence that this graceful bird is seen to best advantage, neither is it at that state of existence for which its form is especially adapted; for though its structure is more equally suited for terrestrial, arboreal, and aërial habits than any other species I have examined, yet the form of the wings point out the air as its peculiar province. Here it is that when engaged in pursuit of the insects which the warm weather has enticed from their lurking-places among the foliage to sport in higher regions, this beautiful species in its aërial flights displays its greatest beauty, whilst soaring above in a variety of easy positions, with its white-tipped tail outspread."

The voice of these birds resembles the call-note of the Swallow, but is somewhat harsher and more monotonous. Some are stationary, while others wander from one place to another as soon as the period of incubation is over. The Wood Swallow makes its appearance in Van Dieman's Land in October, at the commencement of the Australian summer; and after rearing two broods returns again to more northern latitudes. The nests are built in a great variety of situations. Gould found one in a thickly-foliaged bush close to the ground, another placed in the fork of a bare branch, and others under the loose bark of a large tree; they are also frequently placed under the roofs of the settlers' houses; and one species in particular prefers to avoid all labour by taking possession of the deserted nests of other birds. Their own nests are usually neatly formed of delicate twigs, woven together, and lined with fine fibrous roots. The four eggs that constitute a brood are generally of a dirty white, spotted and streaked with reddish brown. Bernstein tells us that the species inhabiting Java build amid the parasitic plants that cover their favourite palms, or upon the leaves of the tree itself, forming their little abodes of grass, moss, fibres, and small leaves, carelessly arranged, but strongly lined with soft and elastic materials. The Indian species, according to Jerdon, makes a bed of feathers inside its nest. Many of the members of this family remain in company even during the breeding season, and build in close proximity to each other. It is still uncertain whether the male bird assists in the cares of incubation, but both parents tend their young with great care, and rear them exclusively upon insect diet.

The FLY-CATCHERS, according to Linnæus, comprise a large number of small singing birds, distinguished by their broad, flat beaks. These have again been divided into a variety of families, amongst which the following stands first upon our list as forming a connecting link between the Fly-catchers and the Shrikes properly so-called.

The KING or TYRANT SHRIKES (*Tyranni*) constitute a family of American birds, having small but powerful bodies, and long, pointed wings, which when closed extend half-way down the tail. The second and third quills exceed the rest in length. The large broad tail is either excised or rounded at its extremity; the legs are strong, the tarsi high, and the toes muscular; the straight and slightly conical beak terminates in a hook, and is surrounded with bristles at its base. The thick soft plumage is usually grey upon the back, and white or yellow upon the under parts of the body. The Tyrant Shrikes are found extensively throughout South America, and are especially numerous in the warmest latitudes of that continent.

THE TRUE TYRANT SHRIKE, KING BIRD, OR TYRANT FLY-CATCHER.

The TRUE TYRANT SHRIKE, KING BIRD, or TYRANT FLY-CATCHER (*Tyrannus intrepidus*), as the most noted member of this family is called, is about eight inches long and fourteen broad. The soft and brilliant plumage of this species is prolonged into a crest at the top of the head. The entire back is of a deep blueish grey, darkest upon the head, the feathers that form the crest being edged with bright red and yellow; the under side is greyish white, tinted with a deeper shade on the breast. The throat and neck are pure white, the quills and tail brownish black, the latter tipped with white, as are the wing-covers. The eye is dark brown, the beak black, the feet greyish blue. In the plumage of the female all these colours are much more dusky and indistinct than in that of her mate.

According to Audubon, the Tyrant Shrike is one of the most attractive birds that visit the United States during the summer months. It appears in Louisiana about the middle of March, and occasionally remains until the middle of September, but the flocks for the most part proceed north before that season, and spread themselves over every part of the country, filling the air with their quivering shrill cry, as they explore the orchards, fields, or gardens, and fearlessly approach the dwelling-houses of mankind. As the breeding season draws near, they may be seen flying merrily about at some distance from the ground, in search of a convenient spot for building, the male constantly uttering his shrill note, and keeping quite close to his mate. The nest is formed of bits of cotton, wool, tow, or similar materials, and is usually of considerable size; the interior is neatly and thickly lined with fibres and horsehair; the four or six eggs have a reddish white shell, irregularly marked with brown streaks. No sooner is the brood laid than the male bird begins to exhibit the utmost courage and devotion in tending and protecting his partner. The entire day is occupied in feeding and entertaining her, as he perches close beside her on a twig, displaying his glowing crest and white breast in all its beauty to her admiring eyes. Should an enemy or rival approach, he darts furiously down and chases the intruder to a distance, sometimes as far as a mile from the nest, and then returns rapidly to his little family. So bold and fearless is the Tyrant Shrike upon these occasions, that even Falcons scarcely venture to approach its nest; and the cats of the neighbourhood, well knowing the reception they would meet with, carefully avoid trespassing within the domains of the intrepid father.

"At this period," says Wilson, "the extreme affection of the Tyrant Shrike for his mate and young makes him suspicious of every bird that happens to pass near his residence, so that he attacks every intruder without discrimination. In the months of May, June, and part of July his life is one continued scene of broils and battles, in which, however, he generally comes off conqueror. Hawks, Crows, and Eagles all equally dread an encounter with this dauntless little champion, who, as soon as he sees one of the last approaching, launches into the air to meet him, and darts down on to his back, sometimes fixing there, to the great annoyance of the king of birds, who, if no convenient retreat be near, endeavours by various evolutions to rid himself of his merciless adversary. But the Tyrant Fly-catcher is not so easily dismounted; he teases the Eagle incessantly, charges upon him right and left, and remounts into the air, that he may descend on his enemy's back with greater force, all the while keeping up a shrill and rapid twittering, and continuing the attack sometimes for more than a mile, until he is relieved by some other of his tribe equally eager for the contest."

The Purple Swallow alone seems capable of contesting the field with this courageous opponent, and resisting its attacks. Wilson mentions having seen the Tyrant Shrike also greatly irritated by his vain efforts to get rid of the Red-headed Woodpecker, the latter dodging him round a rail, and appearing highly amused at the impotent rage of his assailant.

About August the voices of these birds are far more rarely heard, and they employ their time in picking the worms and insects from the furrows in the fields, or in gliding over the water in pursuit of flies. Like the Swallow, they drink and bathe whilst on the wing, invariably perching upon a neighbouring tree, the better to dry their plumage. The Tyrant Shrikes quit the United States before any other of the feathered summer visitors, and prosecute their migrations by night as well as by day, flying alternately with rapidly repeated strokes of the pinions, and a smooth, gliding motion, that is apparently produced without the slightest effort. The flesh of this species is delicate, and much esteemed in Louisiana. A Tyrant Shrike kept for many months by Nuttall always swallowed berries whole; grasshoppers, if too large to be so disposed of, were pounded and broken on the floor of his cage, as the bird held them in his beak. To manage the larger beetles was not so easy; these he struck repeatedly against the ground, and then turned from side to side, by throwing them dexterously into the air, after the manner of the Toucan; the insect being uniformly caught reversed as it descended, with the agility of a practised cup and ball player. After the beetle was swallowed, he remained perfectly still for some time, in order to digest his meal, tasting it distinctly some time after it entered the stomach, as was obvious from the ruminating motion of his mandible. When the soluble portion had been extracted, large pellets of the indigestible legs, wings, and shells were brought up again in half an hour's time, and ejected from the mouth after the manner of Hawks and Owls. This bird, we are further told, had the sagacity to retire under the shelter of a depending bed-quilt in the apartment about which he was allowed to run at large, if the weather was unusually cold.

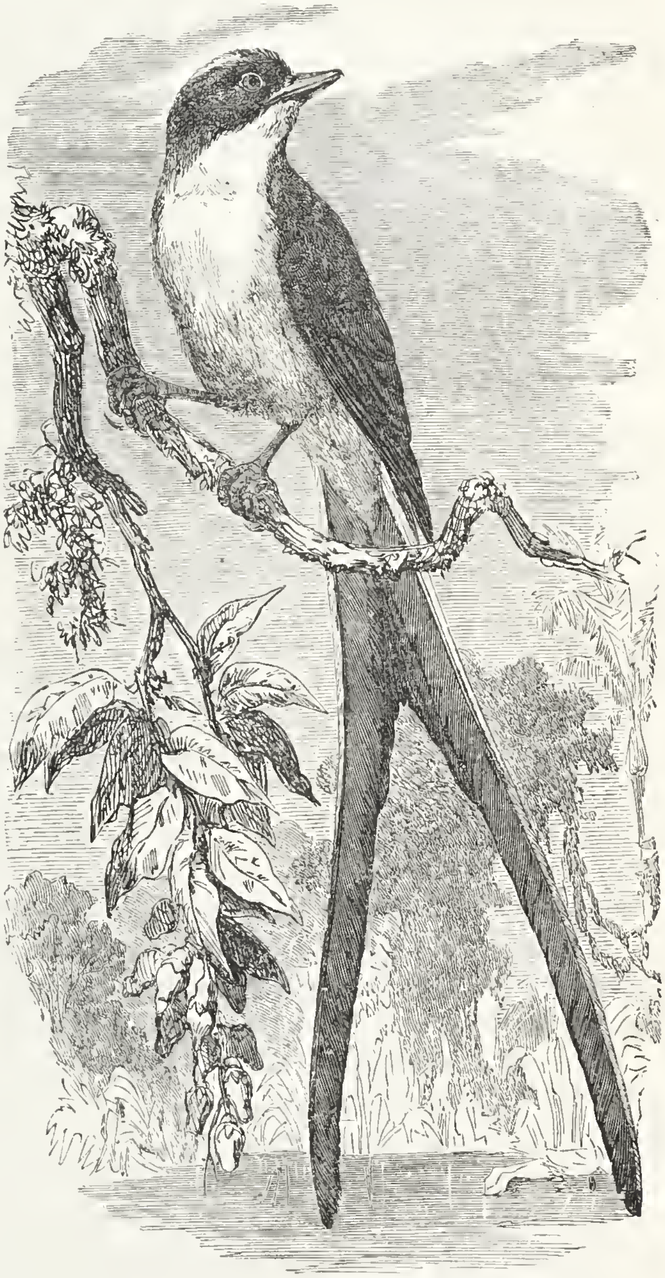
THE BENTEVI.

The Bentevi (*Saurophagus sulphuratus*), a well-known species, resident in Brazil, is recognisable by its comparatively long wings and slightly incised tail. Its legs are powerful, tarsi high, toes long, and armed with sickle-shaped claws; the beak, which is higher than it is broad, and terminates in a hook, is of a conical shape, and equals the head in length; its culmen is slightly rounded, and its base surrounded with bristles. These latter are particularly numerous in the region of the cheek-stripes. The length of this species is five and its breadth ten inches; the tail measures three inches. Upon the upper part of the body the plumage is of a greenish brown; the forehead and eyebrows white; the crest-like feathers upon the crown of the head are of a brimstone-yellow; the sides of the head, the bridles, and cheeks black; the wing-covers, tail-feathers, and quills are broadly edged with rust-red; the throat and fore part of the neck are white; the breast, belly, rump, and legs sulphur-yellow. In the plumage of the young the top of the head is entirely black; the wing and tail-feathers are broadly edged with rust-red; and all the colours paler than in those of the adult birds. The Bentevis are extensively met with throughout South America, particularly in well-wooded pasture-land or meadows; indeed, their loud, penetrating voices may literally be heard from every tree. We learn from Schomburghk that though they subsist principally upon insects, they also devour the nestlings of other species, and frequently visit the houses of the inhabitants in order to pilfer scraps of the meat hung out to dry. So bold are they that it is not uncommon to see them picking up their insect prey from under the very feet of the herds of cattle as they graze. Towards their feathered companions they exhibit unceasing animosity, chasing them and harrying them from spot to spot with loud spiteful cries, occasionally venturing to carry their pugnacious propensities so far as to attack some of the larger birds of prey. As the breeding season approaches, they become still more quarrelsome and noisy, until the air resounds with the voices of both the males and females as they chase each other in angry rivalry or sport among the branches, or so constantly utter their strange cry as to appear prompted by an anxious desire to outdo their companions, both in loudness and rapidity of utterance. This cry, from which the name of the species is derived, has been freely interpreted by the inhabitants of Monte Video and Buenos Ayres to mean, "*Bien-te-veo*," "I see you well," and in Guiana into, "*Qu'est ce que dit?*"

THE TRUE TYRANT SHRIKE, KING BIRD, OR TYRANT FLY-CATCHER (*Tyrannus intrepidus*).

The nest, which is large, thick, and ball-shaped, is artistically constructed of moss, leaves, grass, and feathers, and is entered by a small round aperture in the sides. The eggs, three or four in number, have a pale greenish shell, marked with a few black and greenish blue spots, which are most thickly strewn over the broad end. We learn from Azara that the Bentevi is readily tamed, and when caged will live on peaceful terms with its companions. The same authority mentions a peculiarity that he observed in one of these birds that he himself reared, namely, that it always seized the bits of flesh that were given to it in his beak, and struck them repeatedly against the ground, as though he supposed the morsels required killing before they could be eaten.

The FORK-TAILED TYRANTS (*Milvulus*) differ from the groups already described principally in the great length of their forked tails. Their bodies are slender, and they have short necks, broad heads, and long wings. Their large, strong beaks bulge slightly towards the sides, terminate in a decided hook, and are partially covered with bristles at the base; the feet are short; the toes of moderate size, armed with very sharp, compressed claws; the three first wing-quills, of which the second is the largest, are pointed at the tip. This latter peculiarity is particularly apparent in the male. The plumage is soft and elastic, but by no means thick.


THE SCISSOR BIRD (*Milvulus tyrannus*).

THE SCISSOR BIRD.

The Scissor Bird of the Brazilians (*Milvulus tyrannus*), though properly a native of Central America, is occasionally met with in the United States. The length of this elegant species is about fourteen inches, of which at least ten belong to the exterior tail-feathers, whilst those in the centre do not measure more than two and a half inches. Its head and cheeks are deep black, except at the lower part of the crest, which is yellow; the back is ash-grey; the under side white; the quills, wing-covers, and rump are blackish brown, edged with grey; the outer web of the exterior tail-feathers is white along the whole of the upper half; the eye dark brown; the beak and feet are black.

We learn from Audubon and Nuttall that the Scissor Birds are frequently met with upon all the vast steppes of Central and Southern America, and are common in some districts. They are usually seen assembled in large parties upon low brushwood, and from thence fly down to seize their insect prey. At the appearance of dusk they retire to pass the night together upon a favourite tree. Whilst perched they seem to be of very indolent and quiet disposition, but whilst in flight their appearance is striking and remarkable, as they constantly open and close their long tails, after the fashion of a pair of scissors, during the whole time that they are upon the wing, a circumstance from which they derive their name. Insects constitute their principal fare, and these they capture in the same manner as other members of their family; they also pursue and devour many small birds, and, according to Nuttall, frequently consume berries. The nest, which is usually concealed in a thickly-foliaged bush, is open above, and formed of delicate twigs, snugly lined with a bed of fibres, wool, or feathers; the eggs are white, mottled with reddish brown, these markings being thickest at the broad end. As autumn draws to a close the Scissor Birds congregate with other species in large parties, previous to setting forth upon their migrations. Schomburghk tells us that such of these flocks as he observed leaving the country, settled upon the trees from about three to five o'clock in the afternoon, and remained there for the night, resuming their southern course at the first dawn of day.

THE ROYAL TYRANT.

The ROYAL TYRANT (*Megalophus regius*), so called from the tiara-like crescent that adorns its head, and its great beauty of plumage, has a slenderly-formed body and pointed wings, in which the third and fourth quills exceed the rest in length, the first and second being comparatively short; the tail is moderately long, and quite straight at its extremity; the beak, which is flat and spoon-shaped, terminates in a sharp hook; the feet are short; the toes, of which the two exterior are united at the base, are powerful, and armed with short blunt claws. The plumage is soft and downy, and upon the top of the head is prolonged into a broad flowing crest; at the base of the beak it is replaced by bristles; five very long bristles also decorate the cheek-stripes. The upper part of the body is of a beautiful light brown, while the entire under surface and tail are bright reddish yellow; the throat is whitish; the quills are deep brown or blackish, with a light edge upon the inner web; the wing-covers are tipped with pale yellow; the tiara is of a gorgeous flame-colour, or carmine-red, each feather having a black spot at its tip, surrounded in the male by a light yellow line. These spots gleam with a blue metallic lustre, and the crest extends as far as the nape; the eye is light brown, the upper mandible brown, the lower one light yellow; the feet are pale flesh-pink, and the long bristles black. In the young the plumage is almost entirely brown, mottled upon the breast, and spotted on the back; the crest is very small, and of an orange-yellow. The length of this species is six inches; the wing measures three and a half, and the tail two and a half inches.

The Royal Tyrant inhabits the primitive forests of Brazil and Guiana, where it frequents the most shady recesses, and leads a quiet and solitary life, usually preferring the tops of the trees. Notwithstanding the preference it shows for retired spots, it is frequently caught by the natives, on account of its great beauty. We learn from Burmeister that the capture of the male is rendered comparatively easy, by the fact that a brooding female has no sooner lost her mate than she consoles herself with another. The natives, who are aware of this peculiarity, when they find a pair shoot the male, and then wait patiently until his successor makes his appearance, when he is also killed. We have it on good authority that a female Royal Tyrant will in this manner take to herself as many as a dozen of these ill-fated partners. The eggs are oval, and have light violet shells, marked with brownish or blood-red spots, and streaked with the same shade at the narrow end. We have no account of the nest built by this species.

The STILTED FLY-CATCHERS (*Fluvicolæ*) constitute a group of South American birds differing in many particulars from the Tyrant Shrikes. The members of this group are recognisable by their large, powerful bodies, and their long wings and tail, in the former of which the first quill is only a trifle shorter than the second. They have strong legs, high tarsi, and thick, sharp claws. Their large, high, and slender beak is of a conical form, and but very slightly bent at its extremity. Their thick plumage is heavy, and is composed of small feathers, presenting but a very slight development of down. The base of the beak is covered with stiff bristles, of which from three to five of still stiffer and larger size are scattered over the region of the cheek-stripes.

The Stilted Fly-catchers are frequently met with in the immediate neighbourhood of human habitations, and in such open plains as are almost entirely destitute of trees or bushes, near ponds, rivers, or even in marshy districts, everywhere subsisting upon insects, and carrying on the pursuit of their prey exactly in the same manner as the birds above described.

THE YIPERU, OR YETAPA.

The YIPERU, or YETAPA — Cunningham's Bush Shrike — (*Gubernates Yiperu*), a well-known member of this group, has a slender body, large wings, and very long, forked tail. Its beak is thick and broad at its base, the upper mandible considerably arched, and furnished with a strong, short hook at its extremity; the legs, though short, are powerful, the toes of moderate size, and armed with slightly-curved claws. The plumage is thick and soft, that of the wings and tail being unusually heavy. The back and under side of the body are grey, the wings and tail black, with a white patch at the shoulder, and a light red spot on the outer web of the large quills. The throat is white, separated from the grey breast by a reddish brown line, which extends as far as the eyes; the brow is of a whitish shade, the eye itself reddish brown, and the beak and feet black. The length of this species is fifteen inches, of which nine are included in the length of the exterior tail-feathers, whilst those in the centre are not more than two and a half inches long. The span of the wings is about fifteen inches.

We learn from Azara that the Yetapas principally frequent such plains as are only partially covered with brushwood or trees, and fly about in small parties, seeking for their insect food upon the ground. Their cry is monotonous but penetrating.

THE COCK-TAILED FLY-CATCHER.

The COCK-TAILED FLY-CATCHER (*Alectrurus tricolor*)—the other member of this group which we have selected for description—is easily recognisable by its short, stiff tail, in which sometimes the two exterior and sometimes the centre feathers are of very peculiar appearance, owing to the very irregular development of the web. The thick conical beak terminates in a delicate hook, the legs are slender, the tarsi high, and the toes long. The wings are of moderate size and pointed, the third quill being longer than the rest; the first and second are much incised and narrow towards the tip. The plumage is soft, composed of small feathers, and the bristles on the cheek-stripes are unusually large. In the male bird the inner web of the very broad centre tail-feathers is much developed; the body is almost entirely black, the throat, belly, and shoulders being white. The plumage of the female and young is yellowish brown, except upon the throat, which is whitish, with various light markings, and the centre tail-feathers are no broader than those at the side; all have greyish brown eyes. The beak is of a dirty light brown, and the feet dark brown. The length of the Cock-tailed Fly-catcher is five and a half, and the tail about nine inches. The wing measures two and a half, and the tail two inches.

These birds inhabit all the plains of South America, and, according to Azara and D'Orbigny, perch throughout the entire day upon the high grass, from whence they rise to catch the insects as they pass, and then sink with outspread wings and tail to their former lurking-place; they rarely fly to any distance, and often seem to move through the air in a backward direction. We are without particulars concerning the mode of breeding and nidification of this species.

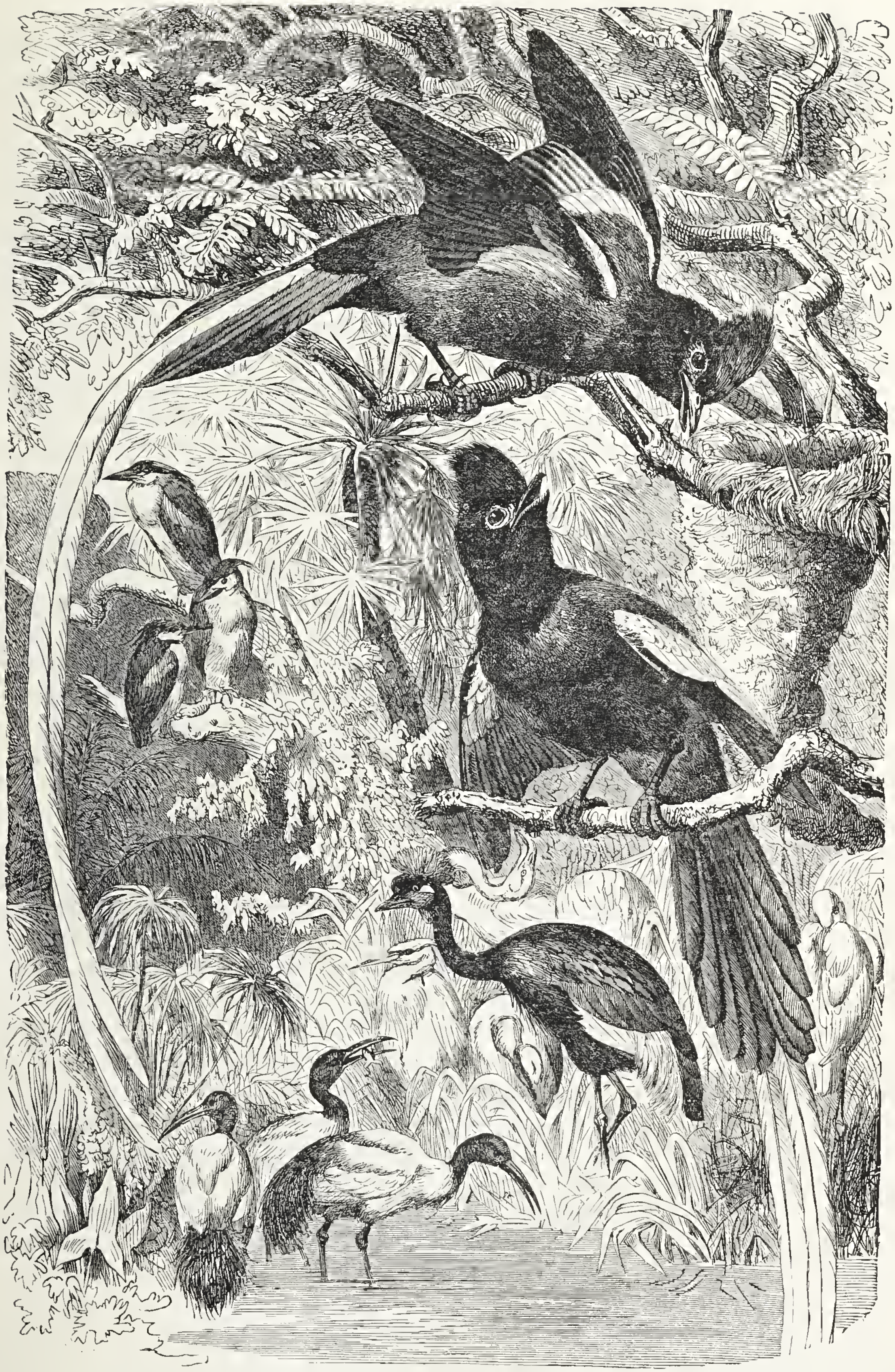
The CATERPILLAR EATERS (*Campephagæ*) comprehend a number of birds inhabiting the East Indies and contiguous islands, as also Africa and New Holland. With their mode of life we are but little acquainted, beyond the fact that they associate in small parties, and seek their food almost exclusively amongst the foliage of trees and bushes. They consume great numbers of insects and their larvæ, and some few eat berries.

THE RED BIRD, OR GREAT PERICROCOTUS.

The RED BIRD, or GREAT PERICROCOTUS (*Pericrocotus speciosus*), the species we have selected as the representative of its family, is a magnificent creature, about nine inches long, and twelve inches and a half broad. The wings, in which the fourth and fifth quills are longer than the rest, measure four and a quarter and the tail four inches. The beak is short, broad at its base, and slightly curved. The tarsi are short, the feet delicate, and the claws much hooked. The plumage of the male is of a brilliant bluish black upon the back, quills, and centre tail-feathers; whilst the entire under side, a broad band across the wings (formed by a line of spots upon the outer quills), and the exterior tail-feathers are glowing scarlet. In the female, the brow, back, and upper tail-covers are greenish yellow; the quills dusky black, spotted with yellow; the centre tail-feathers tipped with deep yellow; the rest of the plumage is bright yellow, decorated with various dark markings. In both sexes the eye is brown, and the beak and feet black.

These very beautiful birds are met with extensively throughout the greater part of India, particularly in Calcutta, Assam, and Burmah; they are most numerous in such localities as are 3,000 or 4,000 feet above the level of the sea. Like most of their congeners, they are generally active and social, usually gleaning their insect food from amongst the buds and blossoms of their favourite trees, and only occasionally descending to the ground or seeking their prey upon the wing. Jerdon tells us that whilst the business of the day is going on the males and females separate from each other, each sex associating in small parties of four or five birds, and carrying on their work in the most lively manner, hopping and climbing briskly about among the foliage, and constantly uttering their cheerful and penetrating note. The nest of the Red Bird found by the writer to whom we have alluded, was constructed of moss and delicate fibres, and contained three white eggs, lightly spotted with brownish red. Radde mentions a grey species, inhabiting China, the Philippine Islands, and Eastern Siberia, and tells us that the flocks which he saw, each numbering some fifteen or twenty birds, tumbled noisily about near the tops of the trees, and filled the otherwise silent forests with their shrill chattering cry. On the first approach of danger, these lively parties at once united into large flocks, and sought refuge in the highest trees, preserving meanwhile such unbroken silence as to render their capture a work of great difficulty.

The FLY-SNAPPERS (*Myiagræ*), another family of these birds, inhabit the eastern hemisphere, and are recognisable by the slender formation of their body, moderate-sized wings, in which the fourth and fifth quills exceed the rest in length, and long tail; in the males of some species the web of the centre tail-feathers is much developed; the beak is broad and compressed, broad at its base, straight at the culmen, incised at its margins, and hooked at its extremity. The feet are short and weak; the plumage bright-coloured, and rich in texture. The base of the beak is surrounded with bristles. All the members of this family are unusually brisk and restless in their habits, and enliven their native forests by their gay plumage and cheerful notes.



THE PARADISE FLY-CATCHERS (*Terpsiphone paradisea*).

The PARADISE FLY CATCHERS, separated as a distinct group under the name of the *Terpsiphone*, comprise the most beautiful and striking species of the family, and are distinguished by the formation of their tail, which is very long and conical, the centre feathers in the male being double the length of those at the exterior.

THE PARADISE OR ROYAL FLY-SNAPPER.

The PARADISE or ROYAL FLY-SNAPPER (*Terpsiphone paradisea*) is a magnificent species, two feet in length, if we include the centre tail-feathers, which measure fifteen and sixteen inches, whilst those at the side do not exceed five inches. The wing is four inches long. The coloration of the sexes differs considerably—in the old male the head, crest, neck, and breast are of a greenish black; the rest of the feathers are white, streaked here and there with black upon the shafts; the primary and secondary quills are black, tipped with white upon the inner and entirely white upon the outer web. The female, readily distinguished from her mate by the comparative shortness of the tail-feathers, is like the young male, of a glossy black upon the head, neck, and breast, and white upon the belly; the rest of the plumage being entirely nut-brown. The nestlings are ash-grey upon the throat, breast, sides, and upper part of the belly. All have deep brown eyes, bright blue beaks and eyelids, and lavender-blue feet. The Royal Fly-snapper inhabits the whole of India, from Ceylon to the Himalaya, where it is replaced by another species, and is usually found within the shelter of such forests as are not more than 2,000 feet above the sea. According to Jerdon, it occasionally ventures forth from its favourite retreats to investigate the surrounding country, but rarely makes its home amongst the brushwood or trees upon the open plains. Its flight is undulatory in its commencement, and very striking, owing to the strange effect presented by its long tail, as it waves and flutters through the air. This flowing tail is raised and spread with every appearance of delighted vanity by its beautiful owner, as it perches quietly in the branches, and glances sharply around in order to detect the approach of an insect, upon which it darts at once with great rapidity, and having secured it, returns to its lurking-place. Almost the entire day is spent in restlessly flitting about from branch to branch, and tree to tree, and constantly uttering its loud but not unpleasing cry. The nest is formed of moss and fibres, lined with hair and wool. This magnificent bird is usually to be seen perched upon a branch, and displaying to the utmost its beautiful plumage, as it alternately expands and closes its graceful crest and tail, in evident appreciation and enjoyment of its own beauty. Its flight, which is very rapid when occupied in chasing its rivals from the field, or pursuing its insect prey, changes into a hovering motion if the bird is under no excitement, and merely wishes to fly to a distant spot; at such times few more attractive sights can be witnessed than it presents as it thus slowly glides in a series of undulating lines through the air, its pure white tail upheld and streaming behind in such a manner as to form a flowing train. These long tail-feathers are only retained during the time that the bird wears its bridal attire, and are soon torn away by the foliage of the trees when the period of incubation is over. Unlike most of its congeners, the Paradise Fly-snapper is endowed with a gentle and sweet-toned cry. Le Vaillant describes a nest that he was informed had been built by one of these birds as being horn-shaped, about eight inches long, and the broadest part two and a half inches across. This little structure, which hung in the forked branches of the mimosa-tree, was most carefully constructed of fibres woven together, so as in its texture to resemble haircloth. The interior was without any warm lining.

The FANTAILS (*Rhipidura*) are a group of birds inhabiting Australia and the neighbouring islands; they are also occasionally to be met with in some parts of Asia. All the various species have slender bodies, long wings, of which the fourth and fifth quills exceed the rest in length, and well-developed tails; their tarsi are powerful, and of moderate length; their beaks broad, curving gradually downwards to the slightly hooked extremity, and incised at the margins; the region of the bill is covered with large bristles.

THE WAGTAIL FANTAIL.

The WAGTAIL FANTAIL (*Rhipidura motacilloides*), so called from its resemblance to the European Water Wagtail (*Motacilla*), is of a glossy greenish black upon the mantle, throat, and sides of the breast; a narrow, yellowish white streak passes above the eyes; and a triangular spot occupies the tips of the smaller wing-covers. The extremities of all the webs of the exterior tail-feathers and the entire under surface are pale yellowish white, the quills are brown, the eyes dark brown, the beak and feet black. Both sexes are alike in colour, and differ but slightly in size, their length being usually about five inches.

The Fantails are found extensively throughout Australia, where they frequent retired woodland districts, but are often seen in the immediate vicinity of men; indeed, so extremely tame and social are they that they by no means confine their visits to orchards and gardens, but enter freely into the houses, in search of flies and other insects. Their flight is undulatory in its course, is seldom long sustained, and never rises above the tops of the trees. Should the birds desire to reach a distant spot, they usually descend to the ground, over the surface of which their powerful legs enable them to run with great rapidity. The song of this species, though loud and shrill, is by no means unpleasing, and, should the moon be bright, is often heard after nightfall. The period of incubation commences in September, that is, in the early Australian spring, and each pair breeds twice, or, if the season be fine, thrice within the year. Their deep, cup-shaped nest is most artistically constructed of dry grass, bits of bark and roots, overlaid with spiders' webs, and lined with a soft bed of delicate fibres, grass, and feathers. Such trees as overhang the water are generally preferred for building purposes. The nest is placed very near the ground, and furnished with a strange-looking, long appendage, which is, no doubt, intended to act as a sort of balance; it is frequently placed in situations that are fully exposed to the violence of the sea and wind, but with such care are the materials for these beautiful structures selected to harmonise with the colour of the branch on which they are placed, that their discovery is always a work of difficulty. The brood consists of two or three dirty greenish white eggs, marked with black or reddish brown spots and streaks, either at the broad end or around the centre. During the whole time that the parents are occupied in the education of their young they exhibit the utmost courage and anxiety to prevent the approach of an enemy, and if alarmed express their uneasiness by a peculiar call somewhat resembling the sound produced by a child's rattle.

The TRUE FLY-CATCHERS (*Muscicapæ*) constitute a family of birds chiefly confined to Europe and Asia, and though unadorned with the flowing tails and glowing tints possessed by some of their near relations already described, comprise many beautiful species. All have elongate bodies, short necks, and broad heads. Their wings (in which the third quill exceeds the rest in length) are long, and their tails of moderate size, either incised or graduated at the extremity. Their short, strong, compressed beaks are broad at the base, and terminate in a slight hook; the upper mandible is furnished with a sharp ridge at its culmen, and the base of the bill is surrounded with bristles. Their soft lax plumage varies considerably in its coloration, according to the age and sex of the bird, and the young are easily recognisable by their spotted appearance.

Like most of the groups above described, all the members of this family frequent trees in preference to bushes, and rarely seek their food upon the ground. Should the day be rainy, they content themselves with berries; but in fine weather pass their time in actively giving chase to every unlucky insect that chances to attract their keen little eyes as they perch quietly among the branches, and, having secured the victim, they at once return to their lurking-place. During the period of incubation, the males utter a monotonous cry; but at other seasons their voices are very rarely heard. The nest built by the Fly-catchers is carelessly constructed, but furnished with a warm bed for the reception of the young, and is placed either in holes of trees or upon a branch, quite close to the stem. Both parents assist in hatching the four or five eggs that compose a brood, and tend the young until the season for migrating approaches, when they leave their native lands for more southern regions, often reaching Central Africa in the course of their winter journeyings.

THE GREY OR SPOTTED FLY-CATCHER.

The GREY OR SPOTTED FLY-CATCHER (*Butalis grisola*) is distinguishable from its congeners by the following characteristics :—The plumage of the male is deep grey upon all the upper part of the body, each feather having a black shaft. The crown of the head is blackish grey, lightly spotted ; and the wing-feathers are tipped with light grey, thus forming an indistinct border to the pinions. The entire under side is dirty white, shaded with reddish yellow upon the sides, and streaked with faint, dark grey, oval patches on the breast and sides of the throat. The eye is brown, the beak and feet black ; the colours in the plumage of the female are paler. The back of the young is whitish, spotted with grey, and marked with brown and reddish yellow ; the under side is of a whitish shade, spotted with grey upon the breast and throat. The male bird is five inches and a half long and nine and a half broad ; the wing measures about three and the tail three and a half inches ; the female is only a few lines smaller than her mate. These lively, restless birds inhabit all the countries of Europe except its extreme north, and are especially numerous in the southern provinces, making their appearance in pairs at the end of April or beginning of May ; in England, about the 20th of May, when they at once commence breeding. They leave for warmer latitudes early in the autumn. During their winter migrations they visit the interior of Africa, and we ourselves have seen large numbers sojourning for a time in the forests near the Blue Nile. In Europe they seem to have no preference for any particular locality, but inhabit highland or lowland regions, unfrequented forest tracts, or the gardens and orchards of a populous district, with equal impartiality ; trees in the immediate vicinity of water, however, afford them the retreats they most delight in, the sheltering branches enabling them to dart down unobserved amongst the swarms of insects that disport themselves over the surface of lakes and streams. Whilst thus engaged in watching for prey, the Fly-catcher waves its tail to and fro, as its keen eye selects the most tempting morsel, which is instantly swooped upon and seized with a noisy snap of the beak, the bird returning at once to its perch. Should its victim be too large to be swallowed entire, its body is crushed against a tree in such a manner as to tear off the wings and legs, and thus render it manageable. The bird thus disposes of flies, gnats, butterflies, and dragon-flies, always catching them upon the wing. When the coldness of the season compels it to subsist upon berries, these latter are also obtained whilst in flight, by sweeping down towards the tree and snatching them from the stalk *en passant*, without tarrying for a moment to rest on the branch. The delicate feet of this species do not permit it to hop from bough to bough, and its movements upon the ground, to which it rarely descends, are feeble and awkward ; but its flight, on the contrary, is rapid, and extremely graceful, its course through the air being diversified from time to time by a fluttering motion, produced by alternately completely closing and broadly spreading its pinions and tail.

The voice of the Fly-catcher may be described as a gentle, twittering chatter. The call-note is monotonous, and in moments of terror or excitement usually accompanied by violent motion of the wings. Solitary individuals are seldom seen, and only during such time as the young are still under parental guidance are they met with in parties; at other times they are found in pairs, that keep apart from each other, and exhibit most determined pertinacity in driving off all intruders from the haunts they have appropriated. The nests are built in a great variety of situations—in holes of rocks, walls, or roofs, in hollow trunks of trees, or on a branch quite close against the main stem; brushwood or low clumps of old willows, however, afford the seclusion these birds prefer. Green moss, fine dry fibres, and similar materials are usually employed in constructing the somewhat carelessly-formed domicile, which is warmly lined with horsehair, wool, and feathers. The female alone undertakes the whole labour of building. Instances are recorded of the nest of this species being found in very odd situations. We have heard of one built in the head of a garden-rake that had been left standing against a wall; another was seen by Mr. Atkinson, on the angle of a lamp-post in one of the streets of London; and a third, mentioned by both Jesse and Yarrell, occupied a still more remarkable position—namely, within the crown of one of the lamps in Portland Place, in London.

Should a couple not be disturbed, they produce but one brood of four or five eggs in the year; these are laid in June, and have a blueish or blueish green shell, very variously marked with light rust-red. Both parents assist in the work of incubation, and hatch the eggs within a fortnight. The young grow rapidly, but remain for a long time under the care of their parents.

A curious circumstance concerning this bird is recorded by Thomas Andrew Knight, Esq., President of the Horticultural Society, namely, that—"A Fly-catcher that had built in a stove in one of the green-houses in the Society's gardens was always observed to leave its nest when the thermometer stood at 72°, and resumed its place upon the eggs as soon as the temperature fell again below that point."

Naumann mentions a little incident that came under his notice, that will illustrate the utility of these birds in the great scheme of Nature. "A boy in our village," he says, "succeeded in obtaining a Fly-catcher's nest before the young were fledged, and placed the little family, including the mother, in a room in his house. No sooner had the parent bird ascertained that all attempts to escape were hopeless, than she at once set to work to feed her young with the flies that were winging their flight about the chamber. Of course before long all these were consumed, and the boy was compelled to carry his prize to a neighbour's cottage, in order that they might procure a supply of food. In this manner the useful family went the round of the village, clearing the houses of vast numbers of troublesome guests. My turn came last, and in gratitude for the benefit received I succeeded in obtaining liberty for both mother and nestlings."

Despite the immense services rendered by these birds, they and their eggs are constantly destroyed by boys and men, who are too ignorant or unthinking to know and appreciate the benefits they confer upon us; large numbers also fall victims to the attacks of cats, martens, rats, and mice. The Fly-catcher is easily reared, and soon so completely adapts itself to captivity that it may be allowed to fly at large about a room. If provided with a small box filled with sand, in which an upright stick is placed with another laid across, it prefers perching upon the latter to any other situation, and never in any way injures the furniture of the apartment. One of these birds kept by ourselves was fed during several successive winters upon rolls soaked in milk, and finely-minced meat; upon this diet it became remarkably tame, and, although liberated every spring, regularly returned to us at the end of the warm season.

The MOURNING FLY-CATCHERS (*Muscicapa*) differ from those members of their family already described in the shortness of their beak, which is almost triangular, in the inferior size of their wings, and in the diversity of plumage that distinguishes the sexes.

THE BLACK-CAPPED OR PIED FLY-CATCHER.

The BLACK-CAPPED OR PIED FLY-CATCHER (*Muscicapa atricapilla*) is five inches long, and about eight inches and a half broad. The male bird is deep grey, more or less clearly marked with black upon the entire upper side; the brow, lower parts of the body, and a patch upon the wings are white. The female is greyish brown above, and dirty white beneath; her anterior wing-quills being blackish brown, whilst the undermost are bordered with white; the three exterior tail-feathers are white upon the outer web. The young are similar to the mother. Both sexes have dark brown eyes, and black beaks and feet. This species is particularly numerous in some parts of Germany, and usually makes its appearance in England about April, leaving for more southern latitudes in September, but it is by no means common in this country. A nest found by Mr. Heysham, of Carlisle, contained eight eggs, one of which lay at the bottom, whilst the rest were placed perpendicularly, in regular order round the little apartment, the narrow end turned upwards and supported against the sides of the wall.

THE COLLARED OR WHITE-NECKED FLY-CATCHER.

The COLLARED OR WHITE-NECKED FLY-CATCHER (*Muscicapa albicollis*) is frequently mistaken for the preceding species, the females especially bearing a most deceptive resemblance to each other. The adult male, however, is recognisable by a white ring around the throat, and the female is without the light edging to the tail-feathers. Both these Mourning Fly-catchers inhabit Europe, the latter being numerously met with in its most southern countries, but comparatively rarely seen in the more northern portions; whilst the former frequents every part of the European continent, making its appearance at the end of April, and leaving again about September: their migrations often extend as far as Central Africa, and are usually carried on at night: the males are always the first to leave, and generally return to Europe before their mates. Both species are extremely lively, passing the entire day, when the weather is fine, in pursuing their prey, or chasing each other in sportive evolutions through the air, or hopping nimbly from twig to twig, meanwhile uttering their twittering call-note. Even when perched, their little bodies are kept in constant motion by the incessant agitation of their wings and tail. The song of these birds is generally to be heard long before sunrise, when all their feathered companions are still asleep; and we are therefore inclined to listen to their voices with a pleasure and attention, occasioned rather by the circumstances under which their penetrating and somewhat melancholy notes are uttered, than from any intrinsic merits of their music; during the breeding season, however, the male sings agreeably and energetically throughout the day. Both these species of Fly-catchers subsist upon the same kinds of insects, and, should their ordinary food fall short, have recourse to various berries, or they glean small beetles from the leaves of the trees. Like all birds that live in a state of constant activity, they are extremely voracious, and devour enormous quantities of grasshoppers, horse-flies, butterflies, gnats, and other insects, always seizing their prey upon the wing, even should the victim be creeping on a leaf, or running over the ground. The nests are usually made in hollow trees, and are padded with a layer of moss and fibres, lined with feathers, wool, and hair. Should a hollow tree not be attainable, the nest is built upon some branch quite close to the trunk. The brood consists of five or six delicate-shelled, pale greenish eggs; these are incubated by both parents, and are hatched within a fortnight after they are laid. In three weeks' time the nestlings are fledged, but they remain for a considerably longer period under parental care and guidance. In some countries boxes are often placed in gardens in order to attract the breeding pairs; and so tame do the families thus reared become, that they will even allow the boxes to be moved from one place to another, without either leaving them or testifying any uneasiness. When caged, they soon attach themselves to those who feed them, and will take flies from the hand: Nightingales' food suits them best when they are subjected to a life of confinement. Large numbers of these useful birds are caught by the Italians, in a variety of nets and snares, during the time of their autumn migrations, and hundreds of them are exposed for sale as dainty morsels in every market-place. In ancient times Fly-catchers were sent from Cyprus to Italy prepared in spice and vinegar, and closely packed in pots or small casks.

THE DWARF FLY-CATCHER.

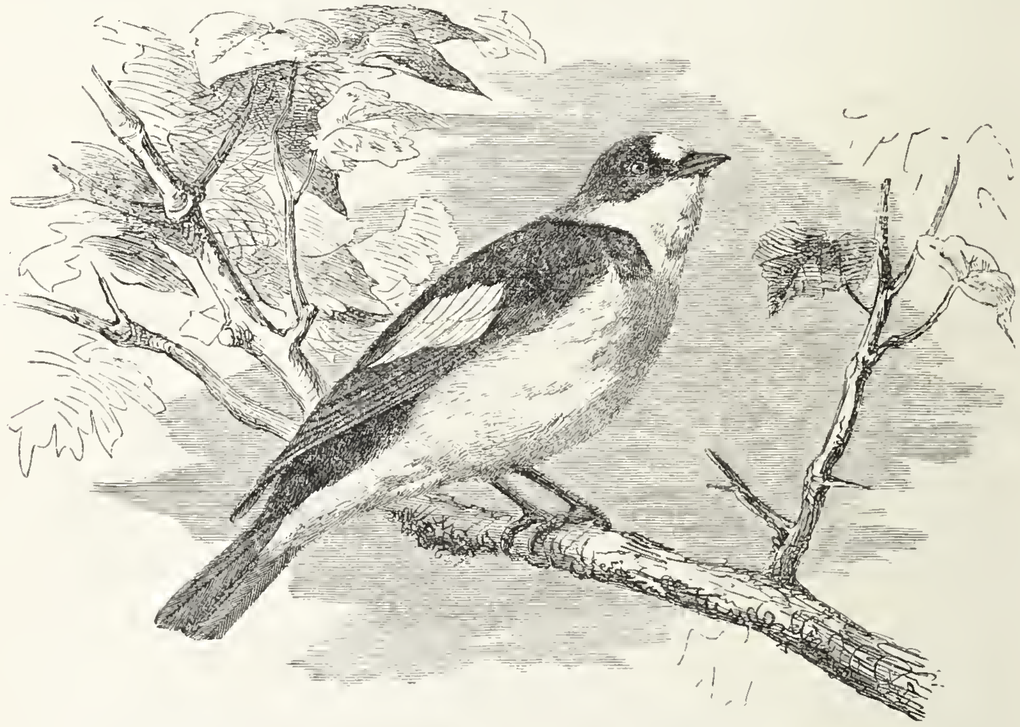
The DWARF FLY-CATCHER (*Erythrosterna parva*) has been selected as the representative of a distinct group, on account of its comparatively powerful beak and high tarsi. The length of this bird is about five and its breadth about eight inches. Its plumage is so diversified as to have given rise to many errors concerning the number of species. During the spring the upper part of the body of the adult male is of brownish grey, deepest in shade towards the head; the feathers of the larger wing-covers and the posterior quills have a light edge; the chin, throat, lower and upper breast are rust-red; the rest of the under side dirty white; the primary quills are of a blackish brown-grey, enlivened by a light border. In the young male the reddish brown upon the throat is paler than in the adult bird, and all the colours in the plumage of the female are fainter and greyer than in that of her mate. All have dark brown eyes, and black beaks and feet.

The Dwarf Fly-catcher is found extensively throughout Poland and almost the whole of Germany, where it seems to prefer the shelter of the beech-woods, living principally in the summits of lofty trees, and rarely approaching the vicinity of man or descending to the ground. Its call is generally a loud piping note; but the song varies so considerably in different individuals as to be sometimes almost unrecognisable. The nest is placed either in a hole or upon the branch of a tree, at some distance from the trunk: it is formed of slender blades of grass vegetable fibres, green moss, or similar materials, lined with wool and hair. The brood consists of four or five eggs, of a greenish white, marked indistinctly with light rust-red patches. Both parents assists in the work of incubation, and exhibit extraordinary attachment to their young; the male bird, however, devotes himself principally to tending and entertaining his mate, whilst she undertakes the main part of the building operations. No sooner are the nestlings capable of supporting themselves than they leave their parents, and retire into the depths of the forests, where they remain until their winter migrations. From the day when the parent birds are separated from their families, their nature seems to undergo a complete change, and they at once assume a quiet, inactive deportment, that strongly contrasts with their previously sportive, busy habits. Count Gourcy, who reared many of these Dwarf Fly-catchers, tells us that they were readily tamed, and soon learnt to know him, welcoming his approach to the cage by flapping their wings and waving their tails above their heads. They bathed freely, and devoured insects in large quantities, eagerly snapping at any fly that was unlucky enough to approach too near.

The SILK-TAILS (*Bombycillæ*) possess a compact body, short neck, and moderate-sized head. Their wing, in which the first and second quills are longer than the rest, is of medium length, and pointed at the extremity; the tail is short, and composed of twelve feathers; the straight, short beak is broad, much compressed at its base, but raised and narrow at its tip, the upper mandible being longer and broader than the lower one, arched at its culmen, and slightly hooked at its extremity, which is visibly incised. The feet are short and powerful, and the exterior and centre toe connected by a fold of skin. The soft silky plumage upon the head is prolonged into a crest, and some of the wing and tail feathers terminate in horn-like laminæ. The coloration differs but little in the two sexes.

THE EUROPEAN OR COMMON SILK-TAIL.

The EUROPEAN OR COMMON SILK-TAIL, BOHEMIAN CHATTERER, or WAX-WING (*Bombycilla garrula*) is eight inches long and thirteen and a half broad. The plumage is almost entirely reddish grey, darkest upon the back, and shading into greyish white beneath; the brow and rump are reddish brown; the chin, throat, bridles, and a streak over the eyes black; the primary quills are greyish black, spotted with gold on the tip of the outer, and edged with white upon the inner web; the secondaries are furnished with parchment-like or horny plates at their extremities, which are bright red; the tail-feathers are blackish at their lower portion, light yellow towards their extremities, and terminate in horny plates, resembling those upon the secondary quills. In the female the colours are fainter, and the horny appendages much less developed than in the plumage of her mate. The young are almost entirely dark brown, with light edges to many of the feathers; the brows and a stripe that passes from the eyes to the back of the head, a streak across the light reddish yellow throat and the rump are whitish, while the lower tail-covers are of a dusky rust-red.



THE COLLARED OR WHITE-NECKED FLY-CATCHER (*Muscicapa albicollis*).

The Common Silk-tail is an inhabitant both of Northern Europe and of North America, but is found only occasionally in some parts of Asia, being replaced in that continent by its Japanese congener, the *Bombycilla phœnicoptera;* while in America the CEDAR BIRD (*Bombycilla cedrorum*) is more numerously met with. In the northern portions of Europe, birch and pine forests constitute its favourite retreats, and these it seldom quits, except when driven by unusual severity of weather or by heavy falls of snow to seek refuge in more southern provinces. Even in Russia, Poland, and Southern Scandinavia it is constantly to be seen throughout the entire winter; indeed, so rarely does it wander to more southern latitudes that in Germany it is popularly supposed to make its appearance once in seven years. On the occasion of these rare migrations, the Silk-tails keep together in large flocks, and remain in any place that affords them suitable food until the supply is exhausted. Like most other members of the feathered creation inhabiting extreme climates, these birds are heavy and indolent, rarely exerting themselves except to satisfy their hunger, and appearing unwilling to move even to a short distance from their usual haunts. With their companions they live in uninterrupted harmony, and during their migrations testify no fear of man, frequently coming down to seek for food in the villages and towns they pass over, without apparently regarding the noisy bustle of the streets. Even during their winter journeyings, they settle frequently, and pass the entire day indolently perching in crowds upon the trees, remaining almost motionless for some hours together, only descending in the morning and evening to procure berries, in search of which they climb from branch to branch with considerable dexterity. Their flight is light and graceful, being effected by very rapid strokes of the wings. Upon the ground they move with difficulty, and rarely alight upon its surface, except when in search of water. Their call-note is a hissing, twittering sound, very similar to that produced by blowing down the barrel of a key. The song, though monotonous and gentle, is uttered by both sexes with so much energy and expression as to produce a pleasing effect, and may be generally heard throughout the entire year. Insects unquestionably constitute the principal food of the Silk-tails during the warmer months, but in winter they subsist mainly upon various kinds of berries. So voracious is this species, that, according to Naumann, it will devour an amount of food equal to the weight of its own body in the course of twenty-four hours. When caged, it sits all day long close to its eating-trough, alternately gorging, digesting, and sleeping, without intermission. Until the last few years we were entirely without particulars as to the incubation of the Silk-tail, and have to thank Wolley for the first account of the nest and eggs. This gentleman, who visited Lapland in 1857, determined not to return to England until he had procured the long-desired treasure, and, after great trouble and expense, succeeded in collecting no fewer than

THE SILK-TAIL, BOHEMIAN CHATTERER, OR WAX-WING (*Bombycilla garrula*).

600 eggs. All the nests discovered were deeply ensconced among the boughs of pine-trees, at no great height from the ground; their walls were principally formed of dry twigs and scraps from the surrounding branches; the central cavity was wide, deep, and lined with blades of grass and feathers. The brood consists of from four to seven, but usually of five eggs, which are laid about the middle of June; the shell is blueish or purplish white, sparsely sprinkled with brown, black, or violet spots and streaks, some of which take the form of a wreath at the broad end (see Fig. 25, Coloured Plate IV.) The Silk-tail readily accustoms itself to life in a cage, and in some instances has been known to live for nine or ten years in confinement, feeding principally upon vegetables, salad, white bread, groats, or bran steeped in water.

The MANAKINS (*Pipræ*) constitute an extensive family of most beautiful and gaily-plumaged birds, inhabiting America, Southern Asia, and New Holland. Almost all the members of this group are of small size, few being larger than a Pigeon, and all are clothed in soft, silky feathers, glowing with the most brilliant hues. Their bodies are compact; their wings short, or of moderate length; their beak short, broad at the base, arched at the culmen, and slightly hooked and incised at its extremity. The feet are powerful, the tarsi rather long, and the toes comparatively short. The plumage, always compact and thick, varies much in its coloration, according to the age and sex. All these birds inhabit forests and woodland districts, some few frequenting hilly or mountainous tracts, while the greater number are only seen in lowland regions. Most of them are extremely lively and social, passing their time in flying in small parties about the summits of forest-trees, and attracting the attention of travellers as much by the peculiarity of their cry as by the glowing tints of their plumage. They live almost exclusively on fruits of various kinds, sometimes on such as are of considerable size. Kittlitz mentions having upon one occasion seen a Manakin flying with such difficulty as to arrest his particular notice, and having brought down the bird with his gun, he found on examining the stomach that it contained a half-digested palm-nut. "How it was possible," he says, "for the bird to have swallowed a fruit nearly as large as its own body appeared to me most extraordinary, but close investigation showed me that the gape of this species, like that of a snake, is capable of great extension. I am, however, still at a loss to explain how the juices of the stomach were enabled to demolish so huge a morsel." Some few species also devour insects.

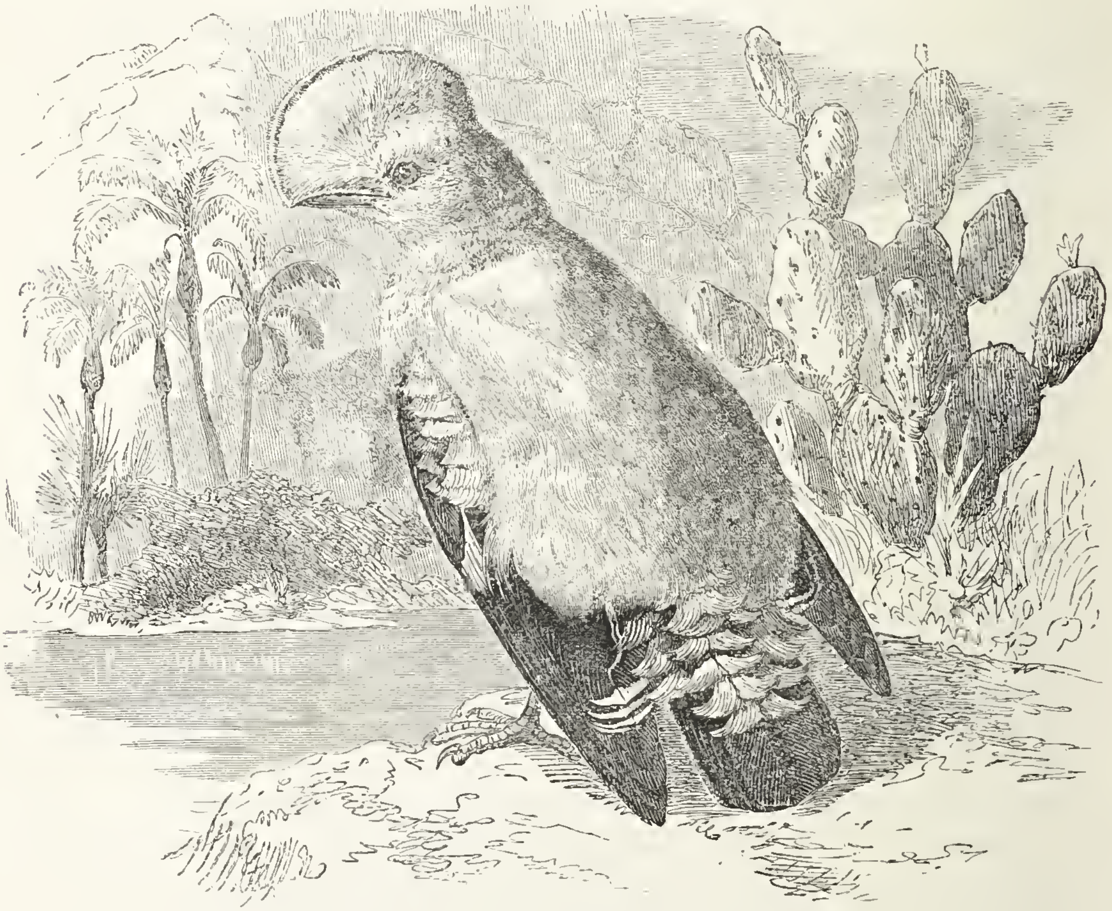
The ROCK BIRDS (*Rupicola*) comprise some of the largest species in the entire family. Their bodies are powerful; their wings, in which the fourth quill exceeds the rest in length, are long; the tail is short, broad, straight at the tip, and almost covered by the long feathers upon the rump. The tarsi are robust, the toes long, and armed with thick, long, and very decidedly hooked claws. The feathers upon the back are broad, with either sharp tips or angular extremities; those upon the brow, top of the head, and nape, form an upright crest or plume.

THE COCK OF THE ROCK.

The COCK OF THE ROCK (*Rupicola crocea*), the best known species of this group, has been minutely described by many writers. The rich plumage of the adult male is of a bright orange-yellow; the feathers that form the crest are deep purplish red; the large wing-covers, quills, and tail-feathers brown, edged with white at their tips, and marked with large white spots. The females and young are of an uniform brown; the lower wing-covers orange-red; the rump and tail-feathers light reddish brown; and their crest considerably smaller than that of the male. All have orange-red eyes, greyish yellow beaks, and yellowish flesh-pink feet. The male is twelve inches long; his wing measures seven and his tail nine inches, the female is at least two inches smaller.

The Cock of the Rock is an inhabitant of Guiana and North-eastern Brazil, where it frequents well-watered mountain regions, and the immediate vicinity of waterfalls, only quitting these localities about June or July, to visit the woods and forests, in order to procure the abundant supply of ripe fruit that awaits it at that season; but it never, even during these excursions, descends into the open plains. Humboldt met with these birds on the shores of the Orinoco, and Schomburghk encountered them twice, each time in large flocks, whilst he was travelling through British Guiana, once on the Canuku Mountains, and again amongst the sandstone rocks near Wenham Lake. "On one occasion," says Schomburghk, "after ascending to the summit of a lofty precipice, so entirely covered with huge blocks of granite overgrown with moss and ferns as to be almost impassable, we came suddenly upon a small open spot, entirely destitute of vegetation. A signal from the Indian who accompanied me warned me to conceal myself silently amongst the surrounding brushwood. We had only been for a few moments thus hidden from view, when we heard a sound so exactly resembling the cry of a kitten that I concluded we were about to attempt the capture of some small quadruped. The cry was instantly and most exactly imitated by my guide, and he was again answered by similar voices proceeding from every direction. In spite of a sign from the Indian to have my gun in readiness, the first sight of the beautiful birds, whose strange notes had thus deceived me, took me so completely by surprise, that I quite forgot to fire until too late; for after darting rapidly from the bushes, and ascertaining by a rapid glance that they had been deluded by a false cry, they instantly retreated to their former shelter. Before leaving the spot, however, I succeeded in shooting seven of the flock, but was not fortunate enough to see them perform the peculiar dances and evolutions I had heard described by my brother and my Indian guide." We will give our readers a description of the strange and interesting spectacle here alluded to, as afterwards witnessed by himself, in the same naturalist's own words:—"Having at last attained a suitable spot, we listened breathlessly for the cry of the birds, and my guides having ascertained exactly where they were amusing themselves, I was noiselessly conducted behind some bushes close to their ball-room, and after we had lain ourselves flat on the ground, saw one of the most attractive and extraordinary sights I ever beheld. Some twenty of these glorious birds were seated upon the stones and rocks around a small open space, in the centre of which a solitary male was dancing vigorously, and performing a great variety of evolutions, alternately springing repeatedly with both feet from the ground, spreading his wings, and moving his head, with most comical gestures, from side to side, waving his tail like a wheel through the air, and then, when nearly exhausted by his long-sustained exertions, concluding by walking coquettishly around the open space, as though desirous to receive the applause of the spectators, which the females expressed by uttering a very peculiar cry. One after another the males came down and took their turn in amusing the company, each going back to his seat before another performer commenced. So completely absorbed was I in watching these strange evolutions, that I had entirely forgotten my Indian companions, and was much startled when a sudden shot was heard, and four of these beautiful birds fell. The rest of the party at once rose in great terror, leaving their companions dead upon the ground."

The remarkable performance thus described by Schomburghk is no doubt a part of the courtship of the Cock of the Rock. We learn from the same authority that the nestlings are to be found at all seasons of the year, but in the greatest numbers about March, when the plumage of the male is in its full beauty. The nests found by Humboldt in Orinoco were made in holes in the granite rocks, whilst those seen by Schomburghk were built in clefts and fissures, suspended like the nest of a Swallow, and covered with resin. One of these nests is often occupied for years together, and repaired by the addition of fresh fibres, feathers, or down, for the reception of each new brood. It is by no means uncommon to find a great number of nests in the same cleft or hole. The brood consists of two white eggs, marked with black, and somewhat larger than those of a Pigeon. The nestlings are reared upon the same fruits and berries that afford the parents their principal means of subsistence. Great numbers of these splendid birds are shot annually, as their skins not only command a high price, but are much employed by the Indians in making a variety of beautiful decorations: a large state mantle worn by the Emperor of Brazil was entirely composed of their feathers. In some districts of South America the natives are compelled to bring a certain supply of skins as tribute, and are thus quickly diminishing the numbers of these elegant creatures. Their flesh is well-flavoured, but of a very peculiar colour, being bright orange-red. Humboldt tells us that the Cock of the Rock is much valued by the Indians as a domestic favourite, and is kept by them in cages made of the stalks of palm-leaves.



THE COCK OF THE ROCK (*Rupicola crocea*).

Another very similar species, found only in Peru, the Peruvian Cock of the Rock (*Rupicola Peruana*), lives entirely amongst trees, upon the berries and fruits of which it subsists; but it exhibits none of the dancing propensities of its Brazilian relative. We learn from Tschudi that in no instance did he ever see one of these Peruvian birds either on rocks or upon the ground, but always associated in large flocks, that lived and built their nests upon trees. He tells us that they are easily discovered from a considerable distance by their loud and most discordant cry.

The TRUE MANAKINS (*Pipra*) comprise a number of small and most magnificently-tinted birds, distinguished by the shortness of their wings and tails. In the former the primary quills are graduated, very narrow towards the tip, and do not extend beyond the base of the small tail, which is either conical or quite straight at its extremity. The short high beak is compressed at its centre, slightly incised directly behind the hook that terminates the upper mandible, and furnished with a sharp ridge at its culmen. The tarsi are high and thin, and the toes short, the outer and centre toes being united as far as the first joint. The compact thick plumage is extremely short in the region of the forehead, and takes the form of fine bristles around the nostrils and the base of the beak. In the coloration of the male, black predominates, affording a rich contrast to the glowing fiery tints that adorn some parts of his body; whilst the females and young usually appear in a modest garb of greyish green. The Manakins live in pairs, or small parties, and principally frequent the inmost glades of their native woods and forests, hopping from bough to bough with untiring sprightliness, and enlivening the most gloomy recesses of their sylvan haunts by their gay colours and animated twitter. Before noon these pairs or parties unite with other birds in search of food, and at the approach of the midday heat again retire to their favourite sheltered nooks. Insects, fruits, and berries of various kinds, constitute their principal food, and to obtain these they occasionally venture near the abode of man. Schomburghk mentions having seen several of these usually very timid birds approach his tent daily, in order to gather the ripe fruit from some fig-trees that grew close to his encampment. The nest of the Manakins is carelessly formed of moss, and lined with cotton wool. The two eggs that constitute a brood are unusually elongated, of a pale tint, and marked with delicate spots that generally form a wreath at the broad end.

The LONG-TAILED MANAKINS (*Chiroxiphia*) constitute a prominent group of the family under consideration, and are recognisable by the prolongation of the centre tail-feathers, this peculiarity being particularly observable in the male.

THE LONG-TAILED MANAKIN.

The Long-tailed Manakin (*Pipra-Chiroxiphia-caudata*) has a sky-blue body, with black wings, throat, and tail, only the two centre feathers of the latter being blue; the brow and top of the head are red. The females and young are of an uniform greenish hue, shaded with brown upon the quills and the extremities of the tail-feathers. Both sexes have dark brown eyes, light reddish brown beaks with very pale margins, and brownish flesh-red feet. The male is about six inches long and ten broad; his wing measures two inches and five-sixths, and his tail two and a half inches. The female is only a few lines smaller than her mate.

The Prince von Wied tells us that he met with this beautiful species very frequently during his travels through Bahia, and generally found it associated in small flocks, which took refuge amid the dense foliage of the trees at the first alarm of danger. We learn from the same author that during the breeding season they live in pairs, and usually build in the fork of a branch, at no very considerable height from the ground. The nest is small, carelessly formed of twigs, blades of grass, wool, and moss, woven roughly together, and generally contains two large eggs, with a greyish yellow shell, marked with indistinct spots, and a somewhat more clearly defined wreath at the broad end. The call-note of the bird is a loud, clear, piping tone. According to Burmeister, the Long-tailed Manakin is never seen near the settlements of the colonists.

THE TIJE.

The Tije (*Pipra-Chiroxiphia-pareola*) is the species we have selected to represent a group possessing tails that are quite straight at the extremity. The body of the male is principally of a coal-black, the back alone being sky-blue, whilst the head is adorned with a magnificent blood-red fork-shaped tuft or crest. The plumage of the female is entirely siskin-green, without markings of any kind. Both sexes have greyish brown eyes, black beaks, and yellowish red feet. The length of this bird is four inches and two-thirds, and the breadth nine inches and six lines.

The Tije is met with very extensively in a northerly direction, from Bahia as far as Guiana, where it inhabits the forests and woodland districts, subsisting exclusively upon fruit and berries. Schomburghk describes the nests he found as formed of moss and cotton wool. They contained but two eggs. Incubation, he tells us, takes place in April and May. The call-note of the Tije is monotonous and loud.

THE BLACK-CAP MANAKIN.

The Black-cap Manakin (*Pipra-Chiromachæris-Manacus*) is the representative of a group known as the *Chiromachæris*, recognisable by their high tarsi, the sickle-shaped form of the first primary quill, and the beard-like development of the plumage in the region of the chin. In the Black-cap Manakin the top of the head, back, wings, and tail are black; the rump grey; the neck, throat, breast, and belly white. The plumage of the female is entirely green. The eyes of both sexes are grey, their beaks lead-coloured, and whitish on the lower mandible; the feet are pale yellowish flesh-colour. "This beautiful bird," says the Prince von Wied, "is found extensively throughout South America, and is particularly numerous in Guiana, living, except during the breeding season, in small parties and flocks, that keep either quite close to the ground, or at no great distance from its surface. When in flight they move from spot to spot with astonishing celerity, the rapid action of their wings occasioning a strange loud sound, not much unlike the drone of a spinning-wheel." The voice of the Black-cap Manakin is likewise described by travellers as very remarkable. It is, we are told, capable of uttering two entirely dissimilar notes, the first of which resembles the sharp, cracking noise produced by breaking a nut, followed by a bass note so deep as to lead travellers to suppose it to be rather the growl of a large quadruped than the cry of a small bird. The food of this species consists of insects and berries. The nest is similar to that of its congeners. In Brazil the Black-cap Manakin is called the "Mono," or "Monk," from the faculty it has of inflating the feathers upon its throat in such a manner as to resemble a beard.

The PANTHER BIRDS (*Pardalotus*) constitute a group of small Australian species, very nearly allied to the Manakins, but possessing short thick beaks, very broad at the base, and deeply indented behind the hooked tip of the upper mandible. Their feet and tarsi are long and thin, the exterior and centre toe being partially united; the wings are pointed, the tail short. The plumage is conspicuous for its elegant markings.

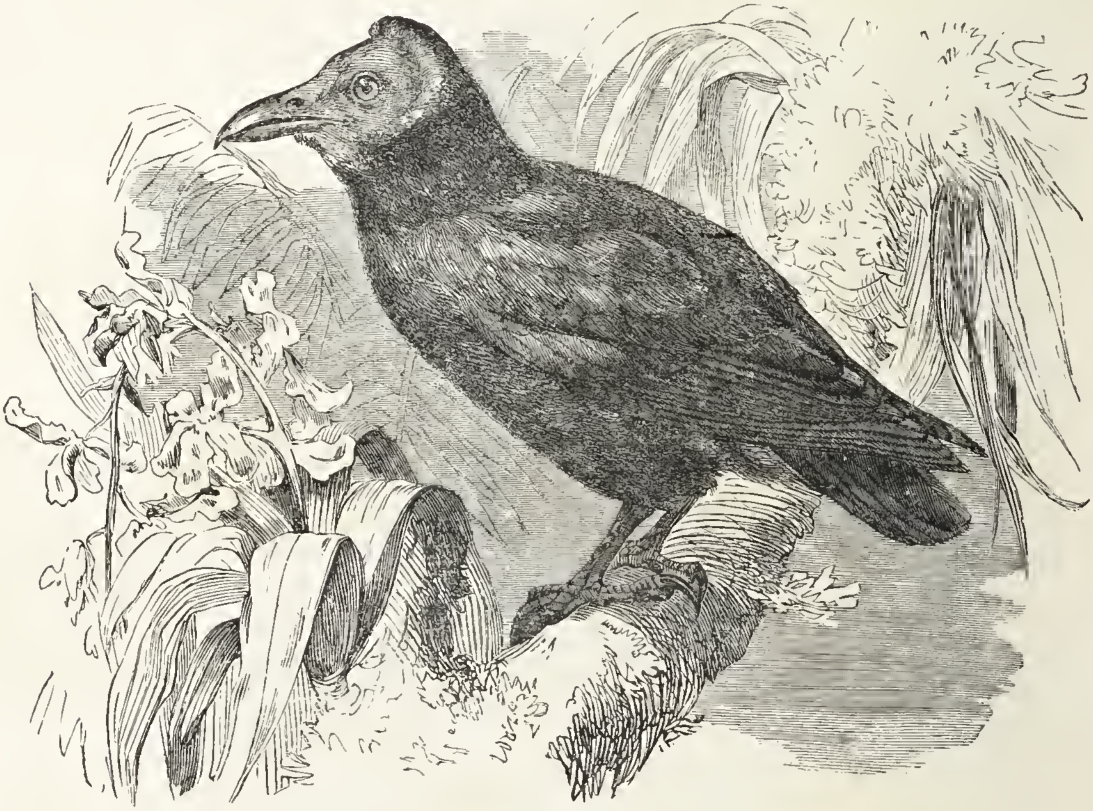
THE DIAMOND BIRD.

The Diamond Bird (*Pardalotus punctatus*), as the best known species is called, has received its name from the spots on its plumage. The crown of the head, wings, and tail, are black, with a round white patch at the tip of each feather; a white streak passes above the eyes, the cheeks and sides of the neck are grey, the feathers on the back grey, shading at their roots into brown, and edged with black at the extremities. The uppermost tail-covers are cinnabar-red; the front of the throat, breast, and lower tail-covers yellow; the belly and sides are yellowish red; the eyes deep brown, the the beak brownish black, and the feet brown. The female resembles her mate, but is somewhat less brightly coloured. Both sexes are three inches and a half long.

The Diamond Bird is found throughout the whole of Southern Australia, from east to west, and is still numerously met with in Van Dieman's Land. Trees and bushes are its favourite resorts, and in search of these it ventures freely into the gardens of the settlers, where it speedily attracts attention by the activity it displays in gleaning its insect fare from the leaves and branches, and by the constant repetition of its very pleasing piping note, composed of two syllables, which have been freely translated by the German settlers into the words, "Wie tief, wie tief." The most striking peculiarity, however, in this beautiful little bird is the strange manner in which it builds, the nest being placed not in hollow trees, but in holes excavated by the brooding pairs in the ground, generally on the side of some steep declivity. These excavations form galleries, or passages, usually from two to three feet long, and at their mouth are just large enough to allow the bird to pass through, whilst the lower end is made much wider, for the reception of the nest, and so raised as to insure safety from the entrance of rain. The chamber for the accommodation of the young is of a round shape, about three inches in diameter, with an entrance hole in its side. This apartment is most beautifully formed of scraps from the bark of the gum-trees, woven together with a perfection of neatness that cannot fail to astonish all who see it, if they consider that the labour of its construction is carried on entirely in the dark; the Diamond Bird affording, in this respect, a very striking contrast to such other members of the feathered creation as build under similar circumstances, their nests being, almost without exception, a mere heap of materials thrown loosely and carelessly together, without the slightest attempt at shapeliness, or endeavour to arrange the heterogeneous mass. Gould was fortunate enough to discover a number of these nests, notwithstanding the care taken by the Diamond Birds to excavate only in such localities as are completely overgrown with plants or the roots of trees. The brood consists of four or five round, smooth-shelled eggs, of a pale reddish white. The female lays twice within the year.

THE DIAMOND BIRD (*Pardalotus punctatus*).

The BALD-HEADED CROWS (*Gymnoderi*) constitute a family generally regarded as nearly allied to the Manakins (*Pipræ*), although differing considerably from the latter in the peculiarity of their habits and the superiority of their size, which varies from that of a Crow to that of a Thrush. The Gymnoderi are recognisable by their powerful body, (in many respects resembling that of a Crow), short neck, moderately long and pointed wings, in which the third quill exceeds the rest in length, and short tail, composed of twelve feathers, and straight at its extremity. The beak varies somewhat in different groups, but is usually flatly compressed both towards the base and at the hooked tip, which is furnished with a slight cavity, for the reception of the end of the lower mandible. The gape extends very far back, nearly to beneath the eyes. The feet, though short and strong, are only fitted for perching, and are seldom employed as means of progression. The plumage is thick, compact, and composed of large feathers, but differs so considerably in different species as to render a general description impossible. In all the members of this family the windpipe is very wide, and furnished on each side with a delicate layer of muscular fibres.

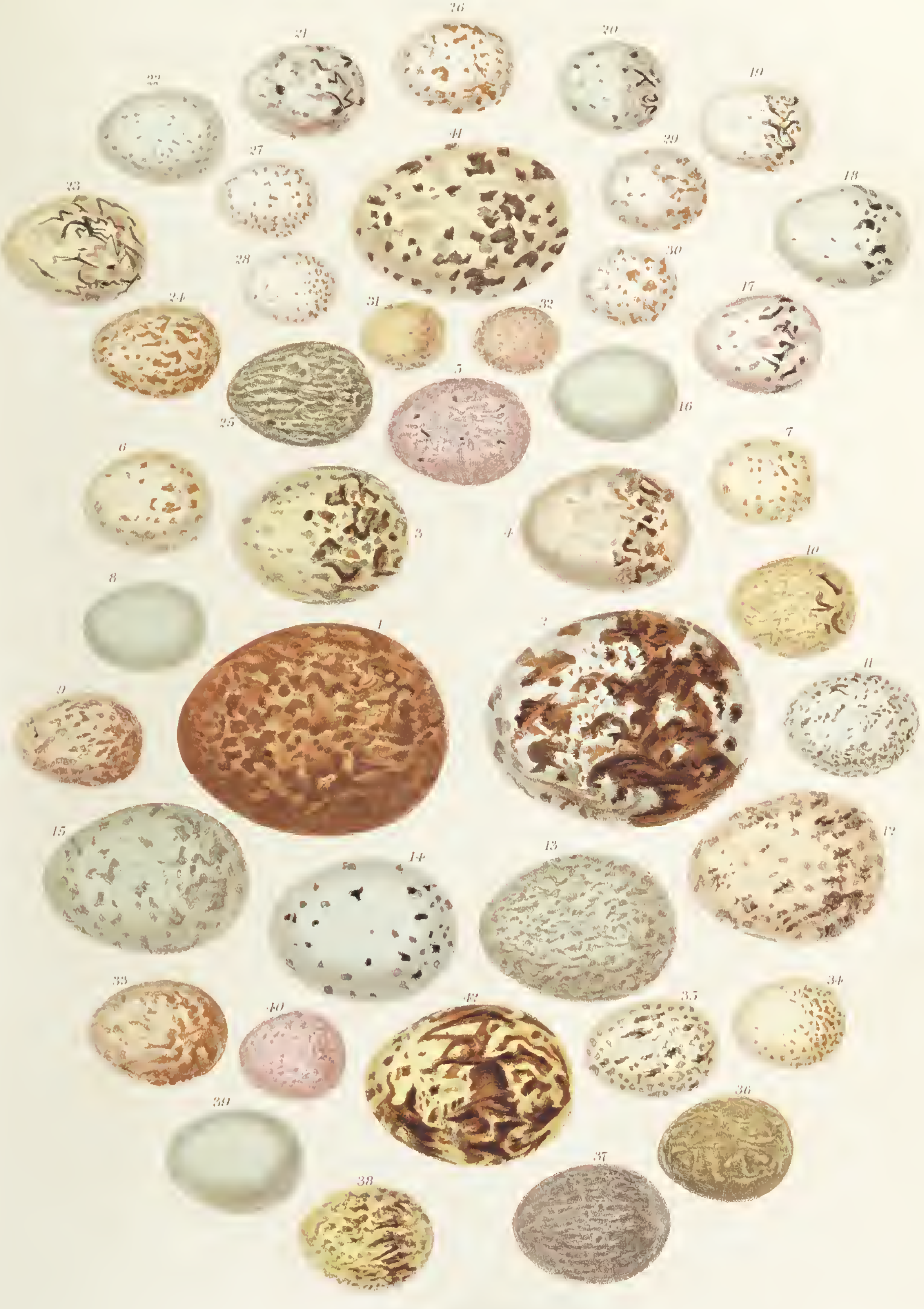


THE CAPUCHIN BIRD, OR BALD FRUIT CROW (*Gymnocephalus calvus*).

The Bald-headed Crows inhabit the forests of South America, and subsist entirely, or almost entirely, upon juicy fruit. In disposition they are indolent, possessed of but little intelligence, and extremely shy. Some few species are rarely heard to utter a note; but they are, for the most part, remarkable for the loudness of their voice, by which their presence is readily detected.

THE CAPUCHIN BIRD.

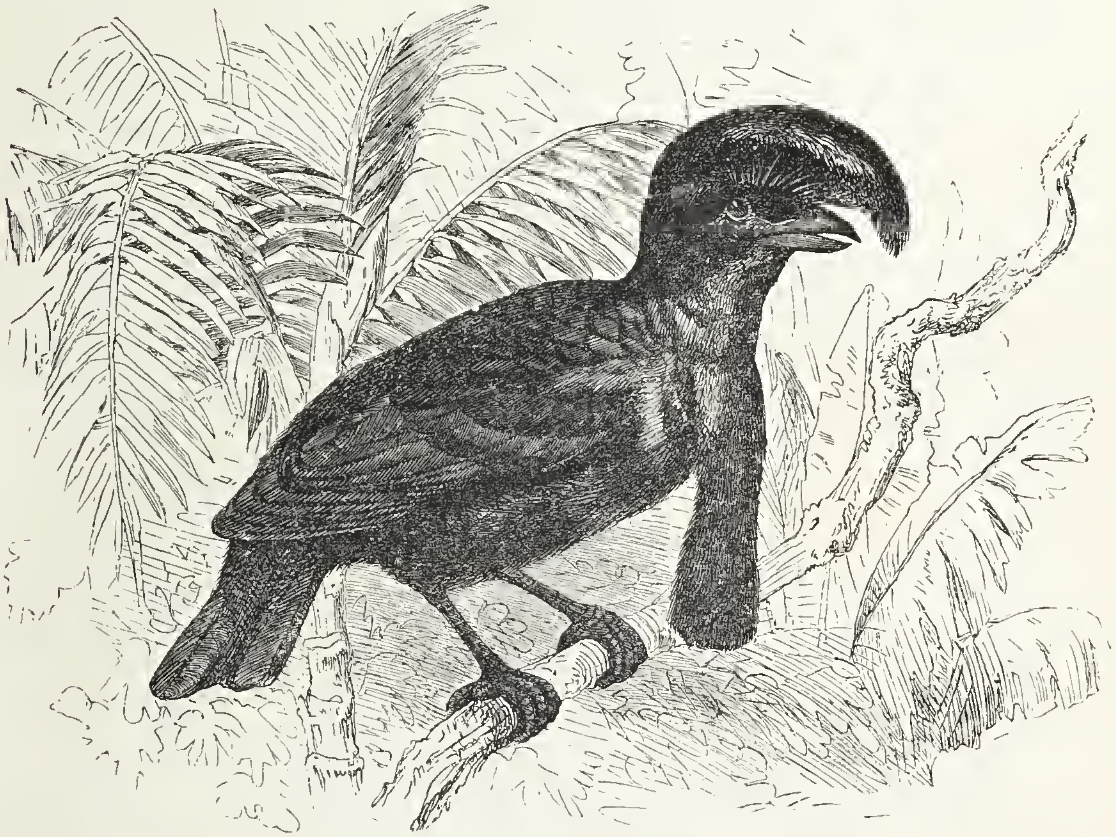
The CAPUCHIN BIRD, or BALD FRUIT CROW (*Gymnocephalus calvus*), represents one of the most remarkable of the groups into which the family of Gymnoderi is divided. The body of this species much resembles that of a Crow, with some slight variation in the different members; that is to say, the beak is considerably flatter, the feet shorter and stronger, and the toes comparatively much longer than in that bird. The slightly-pointed wings extend to the middle of the short tail; the



1. Kestrel (*Falco tinnunculus*).—2. Sparrowhawk (*Accipiter Nisus*).—3. Great grey Shrike (*Lanius excubitor*).—4. Red backed Shr ke ([illegible] 5. Cuckoo (*Cuculus canorus*).—6. Nuthatch (*Sitta europæa*).—7. Creeper (*Certhia familiaris*).—8. Pied Flycatcher (*Musci* [illegible])—9. Spotted Fly-catcher (*Muscicapa grisola*).—10. Yellow Wagtail (*Motacilla flava*).—11 Pied Wagtail (*Motacilla alba*).—12. Missel Thrush ([illegible] *scivorus*).—13. Blackbird (*Turdus merula*).—14. Thrush (*Turdus musicus*).—15. Ring Ouzel (*Turdus torquatus*)—16. Red Start (*Phœnicura* *uticilla*).—17. Greenfinch (*Coccothraustes chloris*).—18. Bulfinch (*Pyrrhula vulgaris*).—19. Goldfinch (*Fringilla carduelis*). 20. Lesser Redpole (*Fringilla linaria*).—21 Chaffinch (*Fringilla cælebs*).—22. Linnet (*Fringilla cannabina*).—23. Yellow-ammer (*Emberiza citrinella*).—24. Tree Sparrow (*Passer montanus*).—25: House Sparrow (*Passer domesticus*).—26. Greater Titmouse (*Parus Major*).—27. Tomtit (*Parus ceruleus*).—28 Bottle Tit (*Parus caudatus*).—29. Marsh Titmouse (*Parus palustris*).—30. Cole Titmouse (*Parus ater*).—31. Golden-crested Wren (*Regulus auricapillus*).—32. Fire Crest (*Regulus ignicapillus*).—33. Redbreast (*Erythaca rubecula*).—34. Wren (*Troglodytes europæus*).—35. Swallow (*Hirundo rustica*).—36. Tit Lark (*Anthus pratensis*).—37 Skylark (*Alauda arvensis*).—38. Woodlark (*Alauda arborea*).—39. Hedge Sparrow (*Accentor modularis*).—40. Grasshopper Warbler (*Salicaria locustella*).—41. Nightjar (*Caprimulgus europæus*).—42. Quail (*Coturnix vulgaris*).

region of the beak, bridles, and eyes, the brow, the top of the head, and the throat, are bare, and along the cheek-stripes are four stiff bristles. The plumage is compact, of a reddish brown colour, shaded with olive-green upon the back; the quills and tail-feathers are blackish brown, the secondaries tinted with red; the upper wing-covers are greenish brown; the face, beak, and feet black; and the eyes dark brown; the bare portions of the face are slightly strewn with bristles; in the young these bristles are replaced by a whitish down, and the entire plumage varies considerably, not only from that of the adult birds, but in different individuals. The body of this species measures sixteen, the wing nine, and the tail four inches.

We are almost entirely without particulars as to the habits of these remarkable birds, except that they live in pairs in the depths of the forests of Guiana and North Brazil, and are rarely met with at an altitude of more than 1,200 feet above the level of the sea. Fruits appear to constitute their principal nourishment; and when not engaged in satisfying the calls of hunger, the couples are usually to be seen perched side by side upon a branch. Their cry, which resembles the bleating of a calf, is uttered, according to Schomburghk, at regular intervals.



THE UMBRELLA BIRD, OR UMBRELLA CHATTERER (*Cephalopterus ornatus*).

THE UMBRELLA BIRD.

The UMBRELLA BIRD, or UMBRELLA CHATTERER (*Cephalopterus ornatus*), is one of the most extraordinary of birds, as far as regards the singular ornaments with which it has been provided. It is about the size of a Crow, and the whole of its plumage being of a deep black it has a good deal of the corvine character in its aspect. Its head is adorned with a large and spreading crest, which appears intended to act as a parasol: this crest is composed of long, slender feathers, rising from a contractile skin on the top of the head; the shafts are white, and the plumes glossy blue, hair-like, and curved outwards at the tips. When the crest is laid back the shafts form a compact white mass, sloping up from the back of the head, and surmounted by the dense hairy plumes. Even in this position it is not an inelegant ornament, but when fully opened its peculiar character is developed. The shafts then radiate on all sides from the top of the head, reaching in front beyond and below the tip of the beak, which is thus completely concealed from view. The crest forms a slightly elongated dome, of a beautiful shining blue colour, having a point of divergence rather behind the centre, like that in the human head. The length of this dome from front to back is about five inches, the breadth from four inches to four and a half. As if this remarkable crest was not enough to distinguish the bird amongst its fellows, it is likewise furnished with a second singular ornament, resembling which nothing is to be found in the feathered creation. This is a long cylindrical plume, depending from the middle of the neck, and carried either close to the breast, or puffed out and hanging down in front, the feathers lapping over each other like scales, and bordered with fine metallic blue. On examining this plume, it is found not to be composed of feathers only; the skin of the neck is very loose, and from the lower part grows a long, fleshy process, about as thick as a Goose's quill, and an inch and a half long, to which the feathers are attached, thus producing a beautiful tassel depending from the breast, and forming an appendage as unique and elegant as the crest itself.

The plumage of this strange bird is of an almost uniform black; the feathers on the mantle edged with dark greenish black; the crest is blackish blue; the quills and tail-feathers deep black. All the small feathers have white shafts; the eye is grey; the upper mandible blackish brown, the lower greyish brown, and the feet pale black. The length of this species is about nine inches and a half; the wing measures eleven inches and three lines.

The Umbrella Birds are inhabitants of Peru, where they particularly frequent the precipices on the eastern side of the Cordilleras, to an altitude of 3,000 feet above the sea; and from thence are met with as far as Rio Negro, and the boundaries of Chili. They associate in small flocks, which subsist principally upon fruit of various kinds, and live almost entirely at the summits of lofty trees. Their remarkable cry, which resembles the lowing of a cow, is most frequently heard just before sunrise and after sunset. We are entirely without particulars as to their nidification and manner of breeding.

The BELL BIRDS (*Chasmarhynchus*)—so called from the resemblance of their voices to a muffled bell—constitute a group with whose habits we are much more familiar. Their body is compact, and about as large as that of a Pigeon. The wings, in which the third and fourth quills exceed the rest in length, are long, and extend as far as the centre of the tail: the latter is slightly rounded at its tip. The beak is about half as long as the head, and so much depressed as to be far broader than it is high; the upper mandible is slightly arched, and curves somewhat at its tip, behind which is a small tooth-like appendage. The gape is remarkably large. The tarsi are short, and the toes long. The thick plumage is composed of small feathers, and takes the form of bristles in the region of the beak, which is also furnished with very remarkable fleshy appendages resembling those possessed by the Turkey. The coloration of the feathers varies very considerably, not only in the four species that compose the group, but in the different sexes.

THE BARE-NECKED BELL BIRD.

The BARE-NECKED BELL BIRD (*Chasmarhynchus nudicollis*). This bird, which is called "The Blacksmith" by the Brazilians, is entirely of a pure snow-white, with the exception of the bridles and throat, which are bare and of the colour of verdigris. The eyes are greyish brown, the beak black, and the feet flesh-pink. The length of this species is about ten, and its breadth nineteen inches; the wing measures nine inches and three-quarters, and the tail three inches and a quarter. The female is not quite so large as her mate, she is black upon the throat and top of the head; the upper part of her body is of a siskin-green, the under side yellow, longitudinally spotted with black, and streaked with whitish and yellowish lines upon the throat. The young male resembles the mother until it is one year old, when it acquires white spots, and only in its third year appears in the garb of the adult.

THE ARAPONGA.

The Araponga (*Chasmarhynchus variegatus*) is also white over the greater portion of its body, but the delicate purity of its hue is marred by a slight intermixture of grey. The wings are deep black, and the top of the head pale brown. The front of the throat is bare, but studded with a multitude of small, fleshy, worm-shaped appendages, of a deep brown colour; the beak and feet are black. The plumage of the female is greenish, and on her throat the strange appendages of the male are replaced by feathers.

THE TRUE BELL BIRD.

The True Bell Bird (*Chasmarhynchus carunculatus*) is entirely snow-white. The male is furnished with a very remarkable wattle at the base of the beak, which is hollow, black, and muscular. When the bird is under the influence of no emotion, this wattle is flaccid and pendent, but when excited he raises and inflates this fleshy horn until it attains a length of about two inches, and a thickness of half an inch at its root. Schomburghk tells us that the female is larger than her mate, but her fleshy lappet is proportionately considerably smaller. The young resemble the mother, and present a very remarkable appearance whilst in their state of transition.

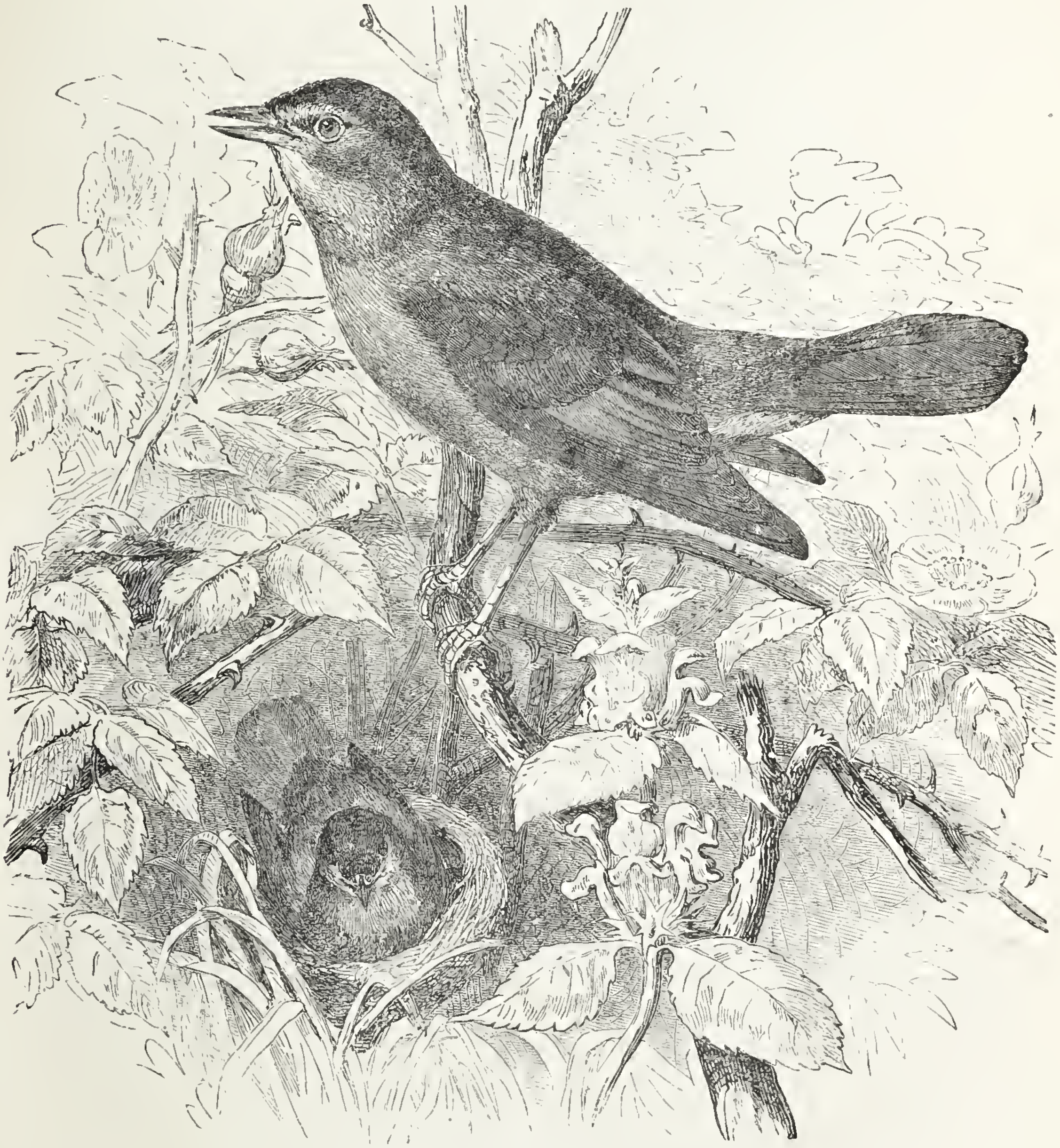
THE THREE-WATTLED BELL BIRD.

The Three-wattled Bell Bird, or Hammerer (*Chasmarhynchus tricarunculatus*), is furnished with three fleshy lappets, one of which grows above the base of the beak, whilst the two others appear as prolongations of the corners of the mouth. The colour of these lappets, as also of the bill and feet, is blackish; that of the eye, light brownish red. The head and throat of the male are bright chestnut-brown, and the nape and upper part of the breast pure white. The female, whose plumage is olive-green, streaked with a lighter shade on the under side, is entirely without the appendages that distinguish her mate. The young resemble the mother. The length of this species is twelve inches; the wing measures six and a half, and the tail four inches; the lappet on the upper part of the beak is from two inches and a half to three inches long, and those at the corners of the mouth about two inches and a half. In the young the fleshy appendages are mere rudiments.

All the different kinds of Bell Birds above described belong to South America. The Blacksmith inhabits the Brazilian forests, the Araponga is met with in the northern portions of the continent, whilst the True Bell Bird is found in Guiana, and the Hammerer in Costa Rica. As far as is at present ascertained, it would appear that in their habits and mode of life these different species closely resemble each other. The Blacksmith, we are told by the Prince von Wied, is one of the most attractive and beautiful of the many strange occupants of the magnificent forests of Brazil; the dazzling whiteness of its plumage affording a striking contrast to the rich deep hues of the leafy retreats it usually prefers. Its loud clear note is distinctly heard to a very considerable distance, as it rings, bell-like, at regular intervals, through the surrounding silence, or is rapidly repeated with a force and peculiarity of tone that strongly resembles the blows made by a smith upon his anvil. No sooner does one bird commence than all the rest of a party follow suit, and combine their efforts to produce such a concert as must be heard to be appreciated. The Blacksmith also frequently perches upon the very topmost bough of one of the giant trees of the forest, at such a height as to be out of the sportsman's reach, who is thus often compelled to content himself with admiring its snowy plumage, as the bird stands in bold relief against a background of deep blue sky, and ever and anon sounds its metallic note, as though to call attention to its conspicuous position. Waterton speaks with equal enthusiasm of the True Bell Bird, whose voice, he tells us, is heard throughout the entire day, but most frequently at early morning or after sunset. Each tone is followed by a considerable pause, lasting, after the first three notes, for the space of six or eight minutes, when the strange performance recommences, with not more than one minute's interval between the sweet, bell-like sounds, which are often audible at a distance of three miles. As long as the bird is in repose, the fleshy lappets we have described hang downwards, but they are raised and turned in all directions at the instant that the cry is uttered; and, on its cessation, drop at once to their former position. The females generally perch on the lowest branches, but are not easily discovered, owing to their silence, and the greenish hue of their feathers, which enables them to hide securely amid the foliage. Fruits and berries constitute the principal food of this group, and, according to Schomburghk, they also occasionally eat insects. The Bell Birds make their appearance in Demerara and Berbice about May or June, from whence they spread over the face of the country, rarely occupying wooded heights at more than from 1,200 to 1,500 feet above the sea, and never visiting the immediate neighbourhood of the coast. Strange to say, notwithstanding the interest excited in these strange and beautiful occupants of the South American forests, we are still entirely without any particulars as to their breeding, nidification, or powers of enduring life in a cage.

The THRUSHES (*Turdidæ*) constitute a group that comprises some of the larger birds of the order. Their body is powerful, their neck short, and head large; the bill is straight, compressed at its sides, and slightly incised at the tip of the upper mandible, which curves downwards over the lower portion of the beak. The tarsi are high, and covered with large plates; the toes moderate, armed with very decidedly hooked claws; the wing is of medium length, and contains ten primary quills, of which the third is the longest; the formation of the tail varies considerably; in some cases it is short and rounded, in others long and graduated; but, generally, it is of moderate size, and more or less straight at its extremity; the plumage is thick, usually of some dusky hue, but occasionally brightly coloured

The GROUND SINGERS (*Humicolæ*), as the most gifted of the above family have been named, include some of the smaller species of Thrushes, and are recognisable by their comparatively slender bodies, short wings, moderate-sized tail, high tarsi, pointed beaks, glossy dark plumage, and expressive eyes. The Ground Singers are entirely confined within the limits of the eastern hemisphere, and make their appearance in Europe with the commencement of spring, leaving again for warmer latitudes at the approach of autumn. They usually prefer woodland regions, more especially such as are well watered, as they there find an abundance of the larvæ, worms, and berries, upon which they mainly subsist. Unlike the groups above described, they glean their food principally from the ground, as they hop over the surface of the soil with the utmost agility, and rarely seek their insect fare upon the trees, from which, however, they pluck ripe berries with much adroitness. From every point of view we must recognise in these birds a very high degree of intelligence, all the senses being well developed, and their sight and hearing particularly good. When upon the wing, their motions are rapid and easy, and as regards their wondrous vocal gifts we need only allude to one member of the group, the Nightingale, the "Queen of Song," to convince our readers that their musical powers are unequalled in the whole feathered creation. In disposition they are vigilant, acute, and lively, ever on the alert against danger, and daring and prompt in encountering a foe. The nests built by the Ground Singers are large, thick, and usually placed in holes among the projecting roots, or in the hollow trunks of trees, also in hedges or other similar situations, but they vary considerably in appearance, according to the species of the builder. The brood consists of from four to seven eggs, which are either of one uniform colour or marked with faint spots. The cares of incubation are undertaken by both parents. The young are at first clad in a speckled plumage, but resemble the adult birds before the end of the first autumn. Most of the members of this delightful group are eminently suited for life in a cage, and become attached to those who rear them.



THE NIGHTINGALE (*Luscinia Philomela*).

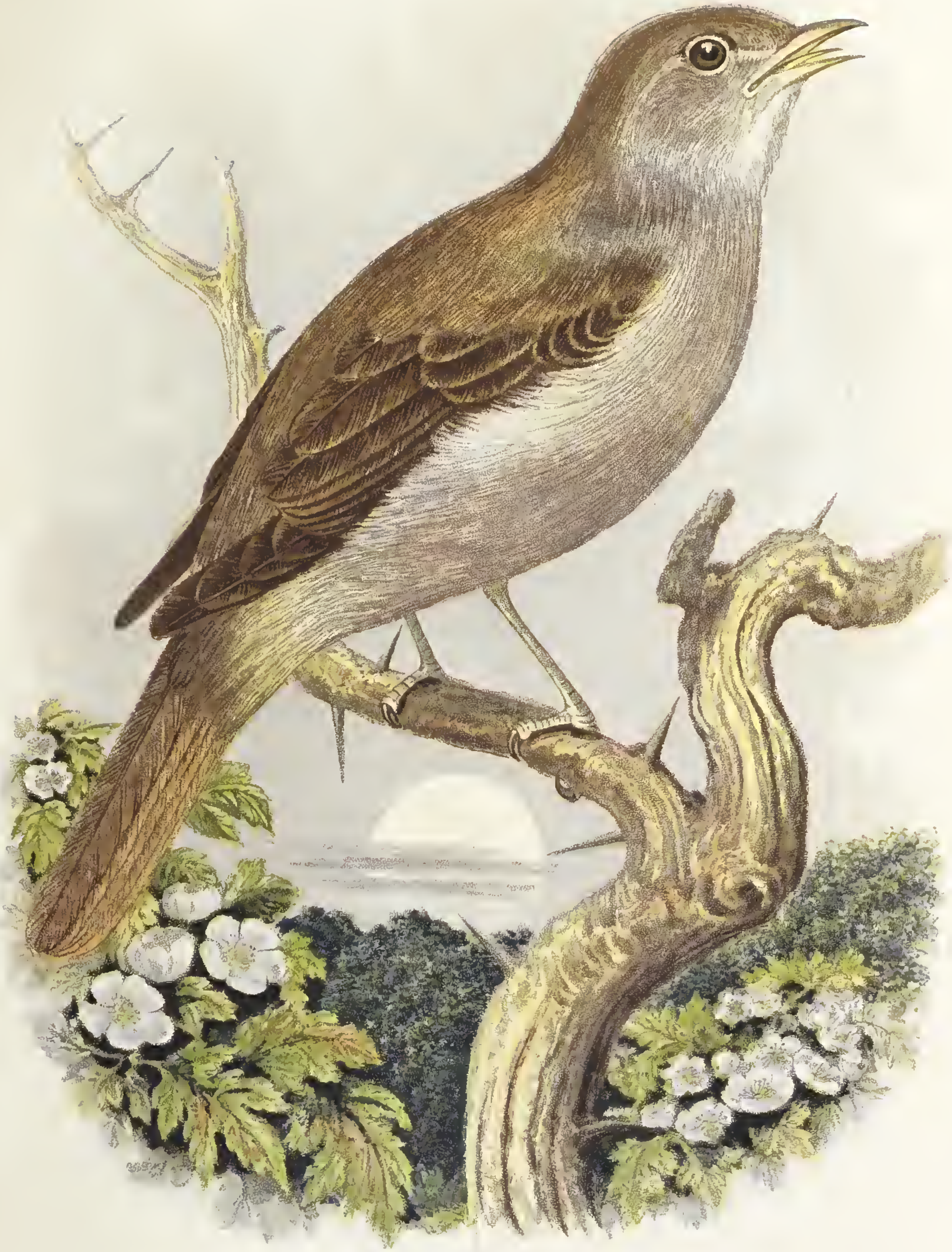
The NIGHTINGALES (*Luscinia*) are recognisable by their slender body, strong legs, high tarsi, moderately long wings and tail, the latter of which is rounded at the extremity. The beak is almost straight, and pointed at its tip; the close thick plumage in both sexes is of a reddish grey.

THE NIGHTINGALE.

The NIGHTINGALE (*Luscinia Philomela*)—see Coloured Plate XVIII.—as the species so familiar to us all is called, is reddish grey upon the upper part of the body, the top of the head and the back being of a deeper shade; the under side is light yellowish grey, palest on the throat and near the centre of the breast; the inner webs of the quills are dark brown, and the tail-feathers brownish red. The eye is also brownish red, and the beak and feet reddish grey. In the young birds some of the feathers on the back have light yellow spots on the shafts, and are edged with pale black, thus giving the plumage a speckled appearance. The length of this bird is six inches and a half, and its breadth nine inches and two-thirds; the wing measures three and the tail two inches and three-quarters. The female is slightly smaller than her mate.

This Nightingale is met with over the whole continent of Europe, from Sweden to the Mediterranean, and over a large portion of Central Asia, as far north as the middle of Siberia; it also visits North-western Africa in the course of its migrations. Central Europe, Turkey, and Asia Minor possess a very similar species (*Luscinia major*), although, as its name indicates, larger and stronger than that above described, from which it is also distinguished by the shortness of the first wing-quill, and the markings that adorn the breast. Both these vocalists are much alike in their habits and general demeanour, but are readily identified by the peculiarities that characterise their song. Woods, groves, and leafy forests in the immediate vicinity of water afford the favourite retreats of these "most musical, most melancholy" songsters; in such localities they live, each pair within its own especial domain, which, although small, is jealously guarded, and boldly defended from all intrusion. The larger species would seem to prefer low-lying districts, but its more celebrated relative, according to Tschudi, is met with in Switzerland and Spain, at an altitude of from 3,000 to 5,000 feet above the sea, if trees and brushwood be there attainable. Some parts of Southern Europe are especially frequented by these delightful birds; Spain in particular is extremely fortunate in this respect; and in certain districts their enchanting voices are heard from every bush and hedge. The declivities of Sierra Morena may be literally described as an extensive "nightingale garden;" and those who, like ourselves, have been so fortunate as to spend a spring morning on Montserrat, or an evening within the walls of the ruined Alhambra, must own that they have enjoyed a concert of sweet sounds that could not be surpassed. For our own part, as we listened to a hundred thrilling voices combining in the performance of their vesper hymn, we were ready to exclaim, with good old Izaak Walton, "Lord, what psalmody hast thou provided for thy saints in heaven, when thou affordest bad men such music on earth!" The general demeanour of the Nightingale is eminently reserved and dignified, and would appear to indicate that it was fully conscious of the admiration it can command. Even when hopping over the ground, it preserves a certain air of stateliness, as it springs from spot to spot, with body erect and tail upraised, pausing for a moment before every fresh effort. Whilst perching in the trees, also, the tail is elevated, but the wings are allowed to droop. Should the bird desire to pass from one branch to another, it accomplishes its object by one active leap, and rarely condescends to amuse itself by jumping from twig to twig. The flight of the Nightingale is undulatory, but though light and rapid, it is rarely sustained beyond a short distance: that these birds, however, are capable of great exertion whilst on the wing must be evident to all who have witnessed the endeavours of two contending rivals to drive each other from the field.

No sooner have the Nightingales arrived in Europe than their song is to be heard almost



THE NIGHTINGALE ___ Luscinia Philomela.

Male

incessantly. Some few pour forth their trilling notes throughout the long, bright night; but, for the most part, they only sing during the day, except just at the commencement of the breeding season, when the desire to please and attract their mates renders the male birds excited and restless. The nest of the Nightingale is a mere heap of dry leaves, rushes, and grass, with a lining of horsehair, cotton wool, or any similarly elastic material; occasionally twigs and straw are also employed. Naumann mentions an instance of a Nightingale building on a branch five feet from the ground, and of another that made its preparations for its little family in the centre of a heap of dry leaves that had been thrown down in a garden-shed; these are, however, exceptions to the general rule, their nests being, for the most part, placed in low bushes, upon felled trees, or in holes in the ground. The eggs, from four to six in number, have a delicate, glossy, greenish grey shell. Both parents assist in hatching their young, who are tended with great care, the male keeping a very sharp eye indeed upon his mate, lest she should endeavour to leave her charge in order to take a peep at the outer world, or even to stretch her wearied limbs. Bäszler mentions having been much amused upon one occasion, when he had scared a brooding female from her nest, by the cries of reproof and marital pecks that were forcibly employed by her indignant spouse, in order to drive back his partner to her maternal duties. Worms of various kinds, the larvæ of insects, ants, smooth-skinned caterpillars, and some species of beetles, constitute the principal food of the adult birds, and upon these the nestlings are likewise reared. During the autumn they also consume large quantities of berries. The young remain under the care of their parents until the approach of the moulting season. Almost immediately after leaving the shell the young males commence trying their voices, but give little or no indication of their future capabilities in the notes they utter during the first months of their life. It is not until the following spring that they become possessed of their full powers, at which time they seek a mate, and in her honour begin to pour forth a copious flood of sounds, as sweet and enchanting as those of the older birds. The moulting season commences about July, after which the autumn migrations commence. These journeyings are accomplished in families, or small parties, the birds flying with great rapidity to very distant countries. We ourselves have met with them occasionally in the forests of Southern Nubia and Eastern Soudan, and have observed that they appear to make themselves but little conspicuous during their absence from their native lands. About the middle of April they reappear in Europe, the males coming first, and at once seek their former haunts, announcing their welcome presence, and greeting their old home by joyous strains, that are continued without intermission for hours at a time, and even prolonged far into the night.

The HEDGE SINGERS, or TREE NIGHTINGALES (*Aëdon* or *Agrobates*), bear a strong family likeness to the True Nightingales, both in their habits and general appearance. They are met with in Southern Europe, North-western Asia, and Northern Africa. The members of this family are recognisable by their elongated body and comparatively strong beak, the upper mandible of which is very decidedly bent; the third and fourth quills of the long, broad wings are of equal length, the tail much rounded, and the tarsi low. Their plumage is soft, silky, and of a pale reddish brown, lightest upon the under side. The sexes are alike in colour, and the young without any spots upon their feathers. So very similar are all these birds in their mode of life that we shall confine ourselves to a full description of but one species.

THE TREE NIGHTINGALE.

The TREE NIGHTINGALE (*Aëdon galactodes*) is of a reddish grey upon the upper parts of the body, darker upon the top of the head than elsewhere; the nape is greyish, the under side greyish yellow or dirty white, tinted with red on the sides of the neck, and with reddish yellow on the thighs; the cheeks are whitish brown, and a white streak passes over the eyes. The quills and upper wing-covers are brown, the former diversified with a narrow light brown edge, and the latter with a broad border of reddish yellow; the tail-feathers, with the exception of the one in the centre, are of a beautiful rust-red, with a white tip, the latter marked with a round, blackish brown spot; the eye is deep brown, the beak and feet reddish. This species is about seven inches long and eleven broad; the wing measures rather more than three, and the tail three inches.

The Tree Nightingales are found principally on arid spots, but sparsely overgrown with low brushwood, though they by no means avoid cultivated districts or the immediate neighbourhood of man. In Spain, they constantly frequent the vineyards and olive plantations, and in North-eastern Africa take up their abode in the gardens, or close to the huts of the natives, provided that they there find a few of their favourite bushes whereon to perch. We ourselves have never met with them in the primitive forests, or upon lofty mountains, though they often frequent wooded highlands. Such of these birds as inhabit Central Africa are stationary, whilst those occupying Northern Africa and Southern Europe migrate, leaving their more northern habitat about the end of September and returning in April. The males take their departure first, followed in a few days by their mates: arrived at their destination, they soon spread themselves over the face of the country. In their habits they are somewhat peculiar; they always select the very topmost point of a bush, post, or tree, as their ordinary perch, and on it they sit with tail erect, drooping wing, upright body, and legs drawn in, as they pour out their song, or glance sharply around in search of a worm or beetle. Should a prize of this nature be discerned, the bird will instantly dart down, flourishing and spreading its tail, and, after running rapidly for a few paces, seize its prey and return to its observatory, uttering a short call-note denoting extreme satisfaction. Their mode of flight and other movements are almost identical with those of the Nightingale, and like that bird they seek their food principally upon the ground, coming occasionally even into the streets of towns, when hard pressed for the means of subsistence, though at other times they are extremely cautious and timid. Strange to say, such as came under our own notice in Central Africa would permit the dark-coloured natives to approach quite close to them, but took instant alarm at the appearance of a white man. The voice of this species is capable of but very little variety, and will bear no comparison with that of its world-famed relative; yet, in spite of this inferiority, it is ever a favourite, its constant cheerfulness enlivening all that listen to its almost incessant song, which may be heard not only through the whole of the breeding season, but is uttered as the little creature runs, perches, or even flies through the air. The period of incubation commences at the end of May, and lasts for a considerable time. The nest, which is large and roughly formed of twigs, moss, and grass, lined with hair, wool, and feathers, is placed either against the trunk of a tree or on one of the larger branches, or in a thick bush. The eggs have a dirty white or blueish grey shell, marked with pale dark patches and brown spots. We are without particulars regarding the rearing of the nestlings, but have ourselves met with unfledged young as late as September.

The BLUE-THROATED WARBLERS (*Cyanecula*) are birds with slender bodies, short blunt wings, and high, slender legs. Their long beak is compressed at the nostrils, the upper mandible slightly raised, but sharp-pointed at its extremity. The plumage is lax, and varies in hue with the age or sex of the bird. In the male the upper part of the body is dark brown, the under side dirty white, streaked at the sides with greyish brown. The throat, which is of a magnificent ultramarine blue, is decorated in some instances with a dark star, which spreads and extends downwards like a black streak, separated from a crescent-shaped spot upon the breast by a delicate light line. A band across the eyes is of a whitish, and the bridles of a blackish hue. The quills are brownish grey; the tail-feathers, except in the centre, blackish-brown at their distal half, rust-red towards the roots. The eye is dark brown, the beak black, the feet greenish in front, and yellowish grey behind. In the plumage of the female all the colours are paler than those of her mate. The young are spotted with rust-red on the back, and striped on the under side, their throat being whitish. This bird is six inches long and eight and a half broad; the wing measures two inches and three-quarters, and the tail two inches and a quarter. The various species of Blue-throated Warblers are distinguishable from each other by the somewhat varied coloration of their throats; thus, that of the male SWEDISH BLUE-THROAT (*Cyanecula Suecica*) has a reddish star in its centre, the WHITE-STARRED BLUE-THROAT (*Cyanecula leucocyana*) a white star, whilst the *Cyanecula Wolfii* is entirely without this decoration.

THE SWEDISH BLUE-THROAT (*Cyanecula Suecica*).

Of these the *Cyanecula leucocyana* is the largest, and the *Cyanecula Wolfii* the smallest species. The females of all closely resemble their mates in appearance.

These birds inhabit the northern portions of the Eastern Hemisphere, and from thence wander forth to visit Central Asia, Egypt, and Nubia, only occasionally venturing as far as Southern Asia or Central Africa. The autumn migration is undertaken in large parties, which fly in a direct line towards their destination, whilst in the spring, on the contrary, the males return first, and steer their aërial course as far as possible in the immediate vicinity of the banks of rivers or any large bodies of water, as in such localities they find an abundant supply of the worms, beetles, and similar fare that afford them their principal means of subsistence. The disposition of the Blue-throats in every way corresponds with their attractive appearance, and their intelligence is by no means inferior to that of the Nightingale. All their movements are characterised by a liveliness that seems to indicate a thorough enjoyment of existence; and their demeanour, as they hop quickly over the ground, with body erect and tail outstretched, evidently denotes a most satisfactory consciousness of their own personal charms. When climbing among, or perching on the branches of a tree or bush, they show to less advantage; and their flight, through rapid, cannot be maintained for any great distance. The song of the various species differs considerably in quality; that of the Swedish Blue-throat is, perhaps, the least pleasing to the ear, owing to the fact that the various strophes that compose it are each in turn repeated with a frequency that soon becomes wearisome to the hearer, after he has ceased to amuse himself with the strange droning under-tone or accompaniment kept up by the bird during the whole song, which produces the effect of two distinct voices. Amongst the Lapps this species is known as the "Hundred-tongued Warbler," from the great faculty it has for imitating, not only the notes of birds, but a great variety of sounds. Like the Hedge Warblers generally, it is most unwearied in these vocal exertions, which are often continued even whilst the little songster is running upon the ground. The nests built by the Blue-throats are often concealed in bushes, or among the roots of trees, with so much care as to render their discovery a work of difficulty. Holes in the banks of rivers or brooks are also sometimes selected for the reception of the nest; that side of the water, according to Hinz, always being preferred which is most exposed to the rays of the morning or noon-day sun. The nest itself is large, open at the top, and formed of twigs and stalks of plants, lined with delicate blades of grass, and in northern latitudes with wool or hair. The eggs, which are laid in the middle of May, are from six to seven in number, and have delicate light blueish green shells, marked with reddish brown spots, and clouded with brown at the broad end. Both parents assist in the work of incubation, which lasts for about a fortnight. The young are reared upon worms and beetles. They leave the nest before they can fly, and soon learn to run over the surface of the ground with the rapidity of mice. No sooner is the first family fairly started in the world than the parents at once commence preparations for a second brood. When caged, the Blue-throat soon becomes very tame, but unless carefully tended only survives for a short time.

The RUBY NIGHTINGALES (*Calliope*) are a group of Asiatic birds nearly related to the Blue-throats, and forming, as it were, the connecting link between them and the Hedge Warblers. All have moderately long and powerful beaks, strong, high tarsi, large toes, and medium-sized wings, the first quill of which is unusually short. The tail is short, pointed at the sides, and rounded in the centre of its tip. The plumage is compact and smooth.

THE CALLIOPE OF KAMSCHATKA.

The CALLIOPE OF KAMSCHATKA (*Calliope Camtschatcensis*) is the species of the above group selected for description, as, according to Temminck, it may now also be regarded as an inhabitant of Europe. Upon the upper part of the body the plumage is olive-brown, deepest in shade upon the brow and head; the under side is greenish grey, except the centre of the breast, which is white; the bridles are black, and a streak over the eyes of glossy whiteness; the throat is of a magnificent ruby red, and separated from the breast by a black line, that fades gradually into a brownish grey. In the plumage of the female all the colours are paler than in that of her mate. The young are dark brownish grey, marked with reddish yellow. The length of this species is six inches; the wing measures two inches; and the tail two inches and one-third.

According to Middendorf, these birds frequent the well-watered provinces and marshy districts of North-eastern Asia, from the middle of May till the beginning of October (occasionally, only, till the end of August), when they commence their migrations, journeying through Eastern Siberia, Mongolia, Southern China, and Japan, and reaching India about November. The Calliope usually remains concealed during the day, and only ventures forth after twilight to obtain food, in quest of which it runs about exactly in the manner of the Blue-throats, displaying, however, even greater agility than they are capable of, when making its way through the long grass that abounds in its favourite marshy retreats.

Jerdon speaks of this species as shy, unsociable, and very silent during the greater part of the year; but with this last statement we by no means fully agree. Whilst performing their migrations, the two sexes certainly associate in flocks; and during the spring the notes of the males are to be heard both by day and night. The voice of the Calliope is very sweet, and though by no means loud, very clear. As the breeding season approaches the male commences singing still more energetically, and is usually to be seen perched, with inflated throat, wings outspread, and tail raised at a right angle with his body, on the topmost branch of a birch or alder-tree, whilst he perseveringly endeavours to attract the admiration of his mate who sits beneath, almost entirely concealed from view. The nests of these birds found by Middendorf on the banks of the Taimye were most beautiful works of art, neatly covered with a roof, and approached by a horizontal entrance-gallery excavated in the sand. The nests were found to contain about five blueish green eggs, which were laid in June. In China the Calliope is known as the "Hung-po" (Redbreast), or "Ching-po" (Goldbreast), and is much prized as a domestic favourite by people of all classes: it is constantly kept by the Chinese, not in a cage, but secured to a perch or branch by means of a string tied round the neck. This peculiar and very practical manner of preventing the escape of a bird is, as Swinhoe tells us, very extensively adopted in the Celestial Empire.

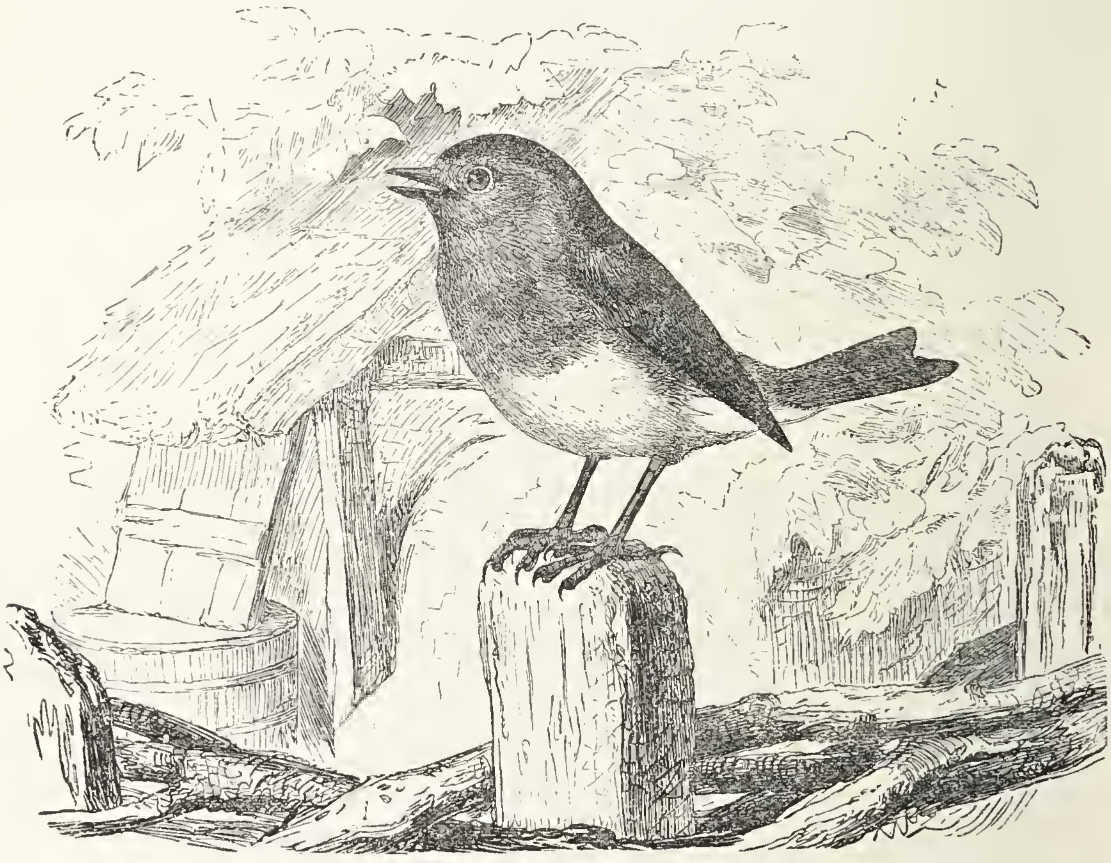
THE ROBIN REDBREAST.

The ROBIN REDBREAST (*Erythaca rubecula* or *Rubecula silvestris*) is the last member of the family to which our space permits us to allude. In this species the upper mandible is arched and incised immediately behind its curved tip. The feet are of moderate height, and delicately formed; the wings, in which the fourth and fifth quills are the longest, are rather short and weak; the tail is of medium size, and slightly incised at its extremity.

The plumage is lax, and of a deep olive-grey upon the upper part of the body; the under side is grey; the brow, throat, and upper portion of the breast yellowish red. The female is somewhat paler than her mate, and the young are distinguishable by reddish yellow spots on the shafts of the upper feathers; the under side is reddish yellow, with grey spots and light edges to the feathers; the large, expressive eyes are brown, the beak blackish brown, and the feet reddish grey. The length of this bird is five inches and a half, and its breadth eight inches and a half; the wing measures two inches and three-quarters, and the tail two inches and a half.

Europe must certainly be regarded as the home of the Redbreasts; beyond its limits they seldom venture, except during their migrations, when some few travel as far as North-western Africa and the adjacent islands. By far the greater number of those met with in the northern and central countries of our continent usually only journey as far as Southern Europe. This lively, beautiful little bird, with whose sweet twittering voice and social fearless habits we are so familiar, is met with in all woodland districts, and may constantly be seen hopping nimbly about our fields and gardens, or flitting from bush to bush, quite close to our houses, in search of the spiders, worms, snails, and beetles upon which it subsists. In winter, when it is difficult to obtain these means of support, it lives upon various kinds of berries. The nest of the Robin is placed in holes in the ground, in hollow trunks of trees, or similar situations, at no great elevation, and is formed of moss, stalks, and leaves, woven together, and delicately lined with hair, wool, and feathers. Should the margin of the cavity in which the nest is placed not project in such a manner as to form a sheltering cover, a roof is constructed, and an entrance made in the side. The eggs, which are of a yellowish white, marked with reddish yellow spots (see Fig. 33, Coloured Plate XVI.), are from five to seven in number; these are laid about May. The parents brood alternately during a fortnight, they feed the nestlings assiduously with worms and insects, and diligently instruct and tend them for about a week after they are fledged; they are then permitted to go forth into the world on their own account; whilst, if the weather be fine, the old birds at once prepare for a second family. Numberless are the anecdotes that might be quoted to show the kindly disposition of these interesting little favourites, but we must confine ourselves to the mention of two or three exemplifications of their habits.

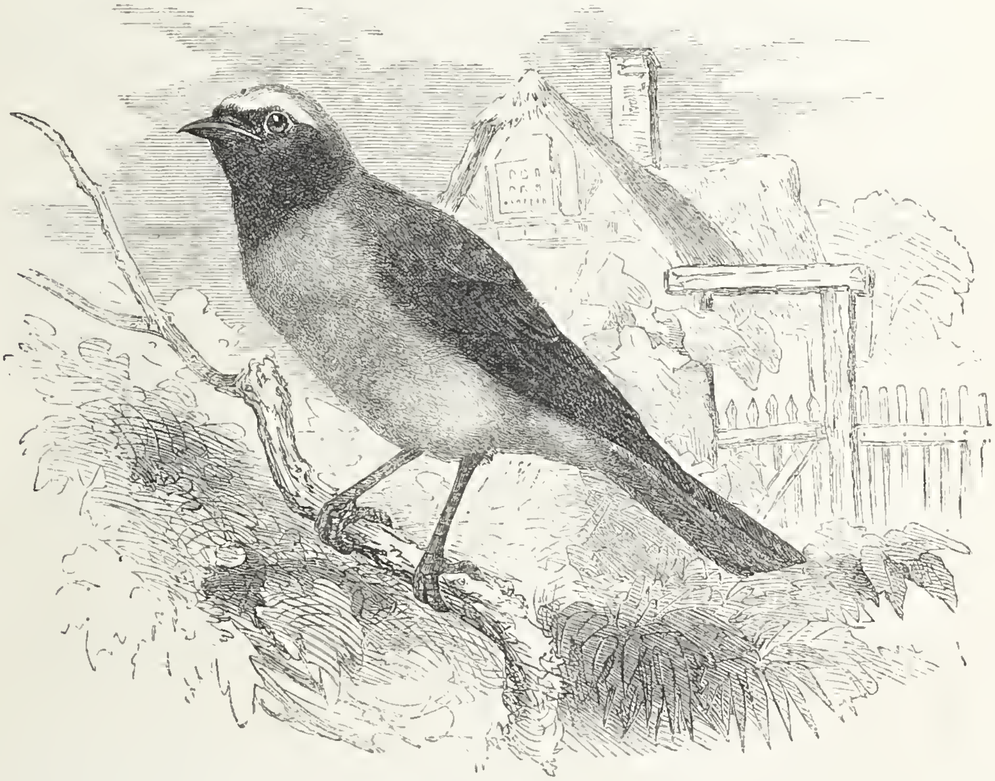
The first that we shall narrate happened in our own village. Two male Redbreasts were captured and confined in the same cage. From the moment of their imprisonment they seemed entirely to have laid aside their usual amiable and social demeanour; morning, noon, and night they squabbled and pecked each other, and fought with an enduring rancour which plainly showed that they each grudged every atom of food or drop of water obtained by the other. This state of affairs was at last brought to a very unexpected termination; one of the captives broke its leg, and forthwith the conduct of its companion was completely changed; it at once took charge of the helpless invalid with as much tenderness as if it had been one of its own young, fed and tended it until the limb was restored; and, strange to say, even after the invalid was strong and well again, neither of the birds ever showed the slightest inclination to renew former hostilities.



THE ROBIN REDBREAST (*Erythaca rubecula* or *Rubecula silvestris*).

An instance of the truly parental affection they often exhibit towards the young of entirely different species is mentioned by Naumann, who upon one occasion introduced an unfledged Linnet into the cage of a Redbreast. No sooner did the hungry nestling begin to clamour for food than the parental feelings and sympathy of the Robin were awakened; it at once hopped off to procure a dainty mouthful, which it placed tenderly in the youngster's gaping beak, repeating the performance till the calls of hunger were completely satisfied. Even in its native woods, and surrounded by its own kind, the Redbreast will occasionally contract a close friendship with a bird of another species. Posslen mentions a pretty instance of this social tendency as having occurred in Germany. "In a wood near Köthen," he says, "a Redbreast was found to have actually deposited six eggs in the same nest with the six eggs laid by a Linnet, the two mothers brooding side by side until the nestlings made their appearance."

The WARBLERS (*Monticolæ*) constitute a numerous family, whose members vary considerably in size, but closely resemble each other, both in appearance and habits. These birds are recognisable by their slender bodies, moderate-sized or long wings, in which the third quill generally exceeds the rest in length; short tail, either straight or excised at its tip; slender tarsi, and awl-shaped beak, with quite straight or slightly arched upper mandible, the latter furnished with a very short, delicate hook at its extremity. The coloration of their thick, lax plumage differs according to the age and sex, the males being usually much more beautifully coloured than their mates, and the young distinguishable from the adults by the spots with which they are adorned. Many species are remarkable for the brownish red and white hues that predominate in the tail-feathers. Most of the various members of this family occupy rocky or stony districts, whilst some few, on the contrary, frequent woods, gardens, or pasture-land. In disposition they are watchful, lively, and restless, but by no means social, never congregating, even during the migratory season, in flocks, but living invariably in pairs, or at most in families. Morning has no sooner dawned than they commence hopping, or rather running over the



THE GARDEN REDSTART (*Ruticilla phœnicura* or *Phœnicura ruticilla*).

ground, climbing among the branches of bushes, or flying about in short courses over a considerable tract of country, always returning to pass the night upon their usual resting-place. Unlike other singing birds, when excited, they bow the head repeatedly, and either flourish and spread their tails or agitate them with a tremulous kind of motion. The voices of this family, though possessing many sweet notes, are generally marred by an intermixture of harsh tones, and a constant repetition of the same cadence. Many species have great facility for imitation, and constantly introduce the notes and strophes of other birds into their own natural song. All such as inhabit the northern portions of the globe migrate to warmer latitudes at the approach of winter, whilst those that live in southern regions remain throughout the entire year in their native lands. The reason of this difference in their habits is at once explained, if we reflect that the insects upon which they almost exclusively subsist are only found in northern countries during the summer, but are readily obtained in southern climes throughout the entire year. Both sexes assist in the labours attendant on building and incubation. The nest, which is carefully hidden from view, is usually situated in clefts or fissures of rocks and stones, or occasionally in hollow trees and similar situations, and though very rudely constructed externally, is provided with a well-lined interior, for the reception of the little family. The eggs, from four to six in number, are generally of a pale blue colour.

The REDSTARTS (*Ruticilla*) are distinguishable by their slender body, awl-shaped beak, which is furnished with a slight hook at the tip of the upper mandible; slender, delicate feet; high tarsi; moderately long wings and tail, the latter almost straight at its extremity, and lax plumage, which varies considerably according to the age and sex of the bird. The members of this group inhabit the eastern hemisphere (Asia especially being tolerably rich in species), and resemble each other no less in their habits and general disposition than in their general coloration and appearance.

THE BLACK-CAPPED REDSTART.

The Black-capped Redstart (*Ruticilla atra* or *Ruticilla titys*) is black upon the head, the back and lower part of the breast being grey. The belly is whitish, the wings spotted with white; the feathers on the wings, and those that form the tail, with the exception of two in the centre, are yellowish red. Uniform deep grey predominates in the coloration of the female and one year old male, the plumage of the latter being marked with undulating black lines. The length of this species is six, and its breadth ten inches. The wing measures three inches and one-third, and the tail two inches and a half.

The Black-capped Redstart inhabits Europe, and is numerous in such parts of the continent as are rocky or mountainous. In Switzerland it is not uncommon to see these birds not only perching at a very considerable altitude, but disporting themselves over the glaciers and beds of snow. In marshy districts or low-lying valleys they are met with far less frequently, and are much more numerous in the south of Europe than in the northern portions. Though by no means social, this species exhibits but little fear of man, and will take up its abode on the house-tops of a crowded city, apparently quite undisturbed by the noise and bustle of the streets. In disposition it is lively and restless, and from dawn to long after sunset appears to be in a state of constant excitement and activity. Like the Fly-catcher, it seizes its insect prey whilst upon the wing, and performs a great variety of beautiful evolutions, as it alternately soars and sinks through the air. Upon the ground it moves with swiftness and ease, bowing its head repeatedly, and whisking its tail whenever anything happens to attract its particular attention, or when under the influence of emotion. The voice of the Black-capped Redstart, though by no means beautiful, possesses great flexibility, and is capable of imitating the songs of a great variety of other birds.

The nest, which is carelessly constructed of fibres, stalks, and grass, and thickly lined with hair and feathers, is built upon rocks, in holes of walls, under eaves of houses, or in similar situations. Hollow trees are occasionally, but very rarely, employed for this purpose. The eggs have a delicate, glossy, pure white shell, and are usually from five to seven in number. Both parents labour equally in feeding and tending the little family, but upon the female devolves almost the entire work of brooding, the male only relieving her for about two hours at noon. As many as three broods are sometimes produced in the course of a season.

THE GARDEN REDSTART.

The Garden Redstart (*Ruticilla phœnicura* or *Phœnicura ruticilla*), a common English species, is a very beautiful bird. The sides of its beak, forehead, and throat, are black; the rest of the upper part of the body dark grey. The breast, sides, and tail, are bright rust-red; the part of the head immediately above the brow and the centre of the under side are white. The plumage of the female is dark grey above, and of a lighter shade beneath; her throat is occasionally of a deeper hue. The young are grey, spotted with reddish yellow, on the back; and the feathers on the under side have rust-red borders; the eyes of all are brown, and the beak and feet black. This bird is five inches and a half long, and three broad; the wing measures three, and the tail two inches and a quarter.

The Garden Redstart is an inhabitant of Europe and Asia, from whence it migrates to pass the winter months in the eastern provinces of India or the interior of Africa. In its habits and mode of life it very closely resembles the species last described, with this exception, that it usually perches upon trees. Its sweet song is composed of two or three gentle flute-like cadences. The nest is roughly constructed of dry fibres and grass, and thickly lined with feathers; it is usually situated in a hollow tree, or hole in a wall or rock, such cavities being preferred as have a very narrow entrance. The eggs, from five to eight in number, have a smooth blueish green shell (see Fig. 16, Coloured Plate XVI.), and are laid at the latter end of April. A second brood is produced in June, and, strangely enough, is deposited, not in the nest employed for the first family, but in another, specially prepared for its reception. The pair, however, often return to their first breeding-place the following summer.

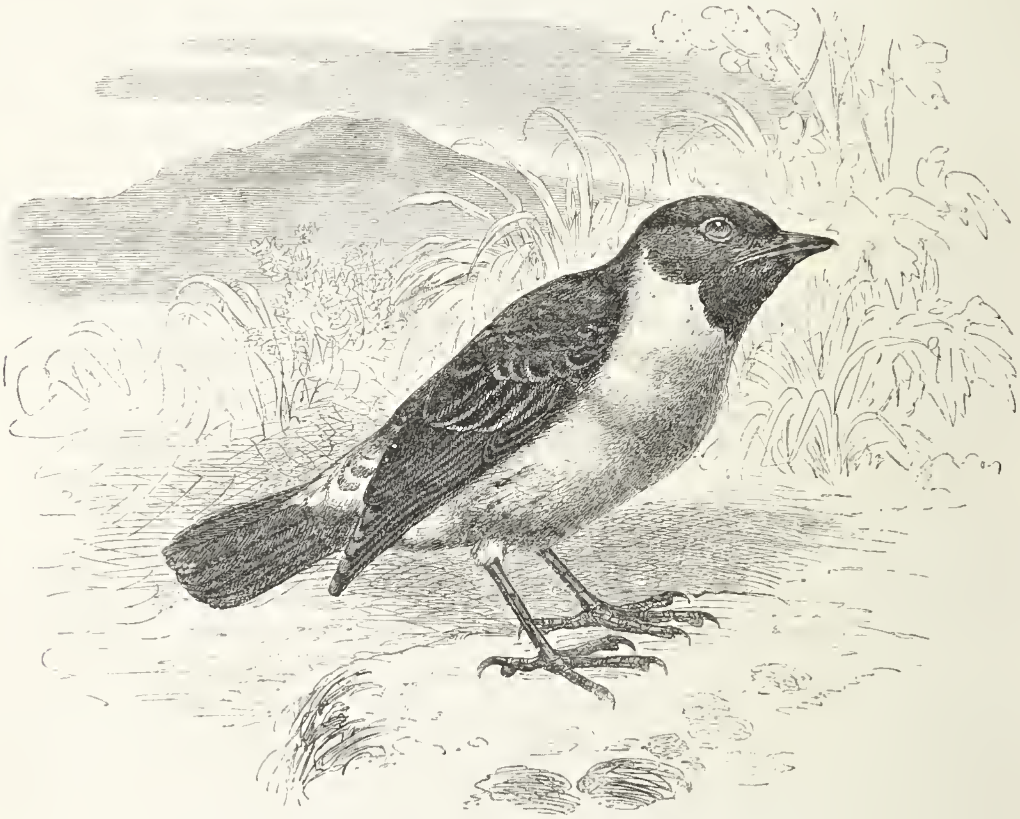
The MEADOW WARBLERS (*Pratincola*) are a group of small, stoutly-built birds, with variegated plumage; short, thick, rounded beaks; wings of moderate size; in which the third and fourth quills exceed the rest in length; short tails, composed of slender feathers; and long, thin legs. The members of this group inhabit the eastern hemisphere, and frequent localities overgrown with shrubs or underwood.

THE BROWN-THROATED MEADOW WARBLER.

The Brown-throated Meadow Warbler (*Pratincola rubetra*) presents a very variegated appearance, owing to the broad reddish grey border fringing the blackish brown feathers, with which the upper part of its body is covered. The under side is light yellowish white; the chin, a streak over the eyes, and the centre of the wings are pure white. All the colours in the plumage of the female are indistinct; a stripe over the eyes is of a yellowish shade, and the light-coloured spot on the wings very faintly indicated. In the young birds the upper part of the body is a mixture of rust-red and greyish black, striped longitudinally with reddish yellow. The pale red feathers on the under side are diversified with reddish yellow spots, and tipped with greyish black. The eyes of all are deep brown, the beak and feet black. The body is five inches and a half long, and eight broad; the wing measures two inches and a half, and the tail two inches. The habits of this bird so closely resemble those of the following species that one description will serve for both.

THE BLACK-THROATED MEADOW WARBLER.

The Black-throated Meadow Warbler (*Pratincola rubicola*), a species very nearly allied to that above described, is black upon the throat and over the entire upper part of the body; the under side is rust-red; the rump, a spot upon the wings, and the sides of the neck are pure white. The female is greyish black upon the throat and mantle, the feathers of the latter edged with reddish yellow; the entire under side is of the latter hue. Both these birds inhabit the continent of Europe and some portions of Asia, and are often met with in Northern Africa during their winter journeyings. All, however, do not migrate. We are told on good authority that they are seen in Spain and Great Britain throughout the entire year. Everywhere they show a very decided preference for cultivated districts, and especially delight in well-watered pasture-land, or such open fields as are upon the outskirts of woods; indeed, the more fruitful the situation the more numerously do they congregate. Their voice is sweet, full, and capable of producing a great variety of cadences. Like most other members of their family, they sing almost incessantly during the spring and early part of the summer, and are often to be heard far into the night. The nests of both these species is loosely formed of dry leaves, fibres, or grass, mixed with a little moss, lined with some elastic material, such as a layer of horsehair. Grass-meadows are generally selected, as affording situations adapted for building purposes, and the nests are placed with so much care within hollows on the ground, or beneath a low bush that, as frequently happens, the brooding pairs are not discovered, either when the field is mowed, or even when the haymakers have raked the grass from its surface. The eggs, five or six in number, are broad in shape, with delicate, glossy, light blueish green shells, and are laid from May to June. The female alone broods; the eggs are hatched in about a fortnight.



THE BLACK-THROATED MEADOW WARBLER (*Pratincola rubicola*).

The young are watched and tended with great care, and are saved from many enemies by the prudence of their parents, who, should danger be at hand, remain perfectly silent and motionless until the unwelcome visitor has left the spot. As regards the movements, diet, and habits of these two species, we will only add that in almost every essential particular they resemble those of the Warblers already described.

The CLIPPERS (*Ephthianura*), another group of the same family, met with in New Holland, are recognisable by their nearly straight beak, which is shorter than the head, compressed at the sides, and incised close to the tip. The third and fourth quills of the long wing exceed the rest in length; the tail is short, and straight at its extremity; the legs are long, the tarsi thin, and the toes slender. We are at present acquainted with but few members of this interesting and probably numerous group.

THE WHEATEAR (*Saxicola œnanthe*).

THE WAGTAIL CLIPPER.

The WAGTAIL CLIPPER (*Ephthianura albifrons*), as the species most frequently met with is called, is deep grey on the upper part of the body, each feather having a dark brown spot in its centre. The wings and tail-feathers are dark brown, the latter, with the exception of those in its centre, decorated with a large, oval, white spot. The fore part of head, face, throat, breast, and belly are pure white. The hinder part of the head and a broad line that passes from the sides of the neck to the upper region of the breast, are black. In the female the mantle is greyish brown; the throat and under side are yellowish white; while the ring about the neck and a light spot on the exterior tail-feathers are only slightly indicated. This species is four inches long. Gould, who first described the Wagtail Clipper, found it upon a small island in Bass's Straits, and afterwards throughout the whole of Southern Australia. Like its congeners, it is lively and active, and ever watchful against the approach of danger. Like them it selects a stone or leafless branch when about to perch, and if disturbed, flies swiftly for a few hundred yards before it again settles. Its step upon the ground is rapid, and generally accompanied by a whisking motion of the tail. The song of the male is extremely pleasing, and is heard constantly about September or October, when the breeding season commences. The nest is formed of small twigs, grass, lined with hair or some similar material; it is usually concealed beneath shrubs or brushwood, at an elevation of only a few inches from the ground. The eggs, three or sometimes four in number, are of a pure white, adorned with reddish brown spots or markings, most numerous at the broad end. The young are carefully tended by their parents, who, however, often betray the situation of the nest, either by their evident uneasiness at the approach of a stranger, or by affecting lameness or exhaustion, in the hope of turning the attention of an unwelcome visitor from their helpless charge to themselves. Two broods are produced during the season, the first family going forth into the surrounding country till the second batch of nestlings are able to support themselves, when they all join company with the parent birds.

The CHATS (*Saxicolæ*) are slender birds, with awl-shaped beaks, which are very lightly incised on the margin, slightly curved at the tip, and very broad at the base. The tarsi are high and slender, the toes of moderate size, the wings blunt, the tail short, broad, and straight at the extremity. The plumage is rich and lax; it varies considerably in its coloration, but is remarkable from the circumstance that the tail, which is in most instances white, is always of a colour different from the body. These birds are met with extensively in Europe and Asia, and are particularly numerous upon the African continent. We shall, however, confine ourselves to a minute description of but a few species, as the habits of all are very similar.

THE FALLOW CHAT, OR WHEATEAR.

The FALLOW CHAT, or WHEATEAR (*Saxicola œnanthe*), is of a light ash-grey upon the upper part of the body. The breast, brow, and a band over the eyes, are white; the under side and rump reddish yellow; a patch upon the cheek-stripes, the wings, and two centre tail-feathers are black; the rest are white towards the base, and black at the tip. The eye is brown, the beak and feet black. After the moulting season the upper part of the plumage of the male is rust-red, and the under side reddish yellow. In the female reddish grey predominates. The brow and a stripe over the eyes are dirty white, the bridles pale black, the under side light brownish red; the feathers of the wings are dark grey, edged with light yellow. The length of this species is six inches and a quarter, and the breadth eleven inches; the wing measures three inches and a half, and the tail two inches and a quarter; the female is a few lines smaller than her mate. The Wheatear both dwells and breeds in the British Islands, and throughout that portion of Europe that lies between the Alps, Pyrenees, Balkan Mountains, and Lapland; in Asia it is met with in corresponding latitudes; occasionally it appears in the upper provinces of India; we have also seen it ourselves in many parts of Africa. In Southern Europe this bird is replaced by two nearly-related species—

THE EARED STONE CHAT AND BLACK-THROATED STONE CHAT.

The EARED STONE CHAT (*Saxicola aurita*) and the BLACK-THROATED STONE CHAT (*Saxicola stapazina*). The first of these is six inches long, and ten inches and a half broad; the wing measures three inches and a third, and the tail two inches and a half. The plumage on the upper part of the body is whitish grey; that of the under side greyish reddish white; a narrow line that passes from the beak to the eyes, an oval patch on the cheek, the wings, central tail-feathers, and the tips of those at the exterior are black; the colours in the plumage of the female are paler and redder than those of her mate. The Black-throated Stone Chat is rust-red on the upper portions of the body, breast, and belly; the throat and wings are black, the feathers of the single wing-covers edged with rust-red; the exterior tail-feathers are white, tipped with black, and those in the centre entirely black. The young of both species are greyish yellow on the head, nape, and back, every feather being lightly edged with grey at the tip, and streaked with white on the shaft. The under side is dirty white, with a greyish shade upon the breast; the quills and tail-feathers are pale black; the feathers of the wing-covers are bordered with yellowish white.

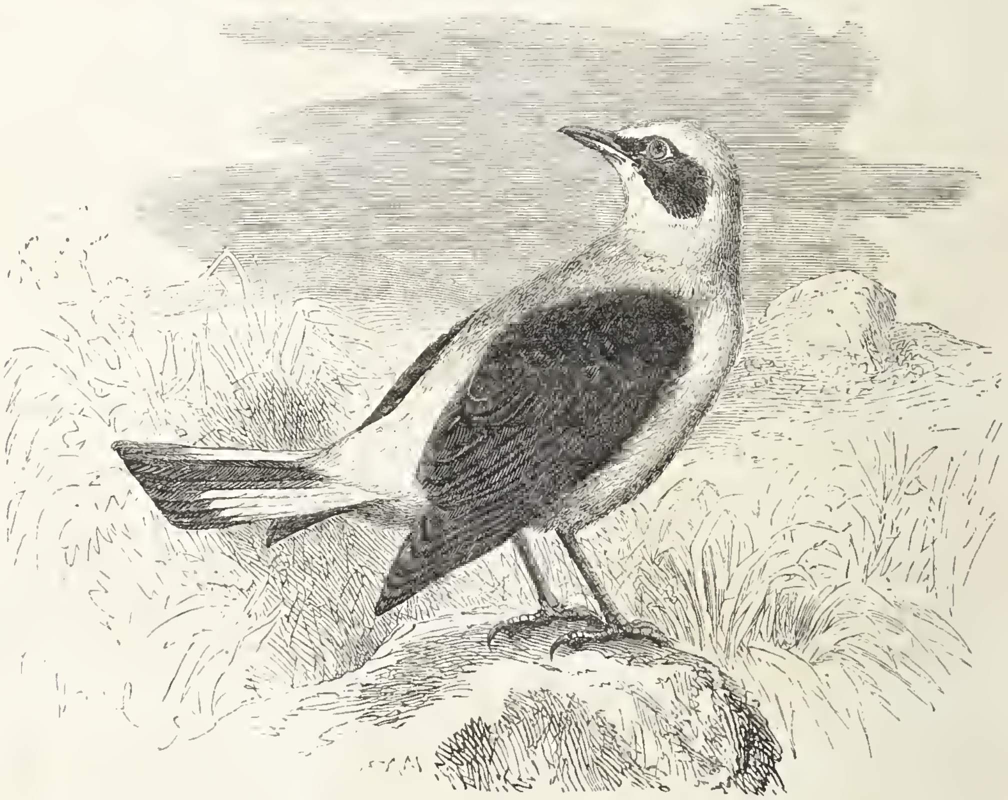
Though they by no means avoid fruitful tracts or cultivated districts, these birds very decidedly prefer to take up their abode in mountains or stony regions, and are for this reason particularly numerous in Sweden, Southern Germany, and Switzerland; in the latter country they are popularly known as Mountain Nightingales, from the height to which they often ascend. Even the icy and rugged tracts of Scandinavia and Lapland seem to suit their requirements; and we have often seen them hopping nimbly over the glaciers, in situations where no other living object was discernible. Individuals inhabiting more southern latitudes display the same liking for barren ground, and are usually seen in localities so sterile and arid as to appear totally incapable of affording them a sufficient supply of the insects upon which they subsist. Their disposition is lively, restless, vigilant, and very unsocial; only during their winter migrations do they commingle with others of their species. Even when circumstances compel a certain amount of neighbourship, each bird lives for itself, without appearing to take the slightest interest in the proceedings of others in the vicinity.

The flight of the Stone Chat is remarkable, owing to the fact that, at whatever height the perch may be from which it starts, the bird invariably sinks towards the ground, close to the surface of which it always flies, in a series of short, undulating lines. At the approach of the breeding season this mode of flight is changed, and the bird then entertains itself and its mate by repeatedly soaring into the air to a height of some twenty or thirty feet, singing as it goes, and then descending precipitately, to end its joyous song upon its favourite perch. When standing upon a stone or rock, it holds its body erect, shakes its tail, and, should anything unusual catch its eye, at once commences bowing repeatedly. This strange habit has given rise to its Spanish name of the "Sacristan," in allusion to the genuflexions practised by the monks. The voices of all the species we have described are loud and peculiar, but by no means pleasing. Of their performance, however, it may be said that what is wanting in quality is made up by the energy and persistency with which their song is poured out, not only from daybreak to sunset, but long after night has closed in. The nest, which is for the most part built in holes and fissures of rocks and stones, or occasionally in hollow trees, is carefully concealed from view. Its dense roughly-made exterior is formed of fibres, grass, and stalks, lined thickly and warmly with wool, hair, or feathers; the eggs, from five to seven in number, are of a delicate blueish or greenish white, occasionally, but rarely, spotted with pale yellow. The female hatches her brood with but little assistance from her mate, who perches near, in order to keep a strict watch against the approach of danger, and warns her of its appearance by an anxious cry. But one brood is produced in the season, the first eggs being laid about May; occasionally, however, the female produces two broods. The young remain with the parents till the winter migration, which takes place in September. In March they again return to their native lands.

The RUNNING WARBLERS (*Dromolæa*) constitute another group of this family, recognisable by the predominance of black in the coloration of their plumage, and by the formation of their comparatively long and much compressed beak, which is broad at its base, and very decidedly curved and hooked at its extremity. The wings are long and pointed.

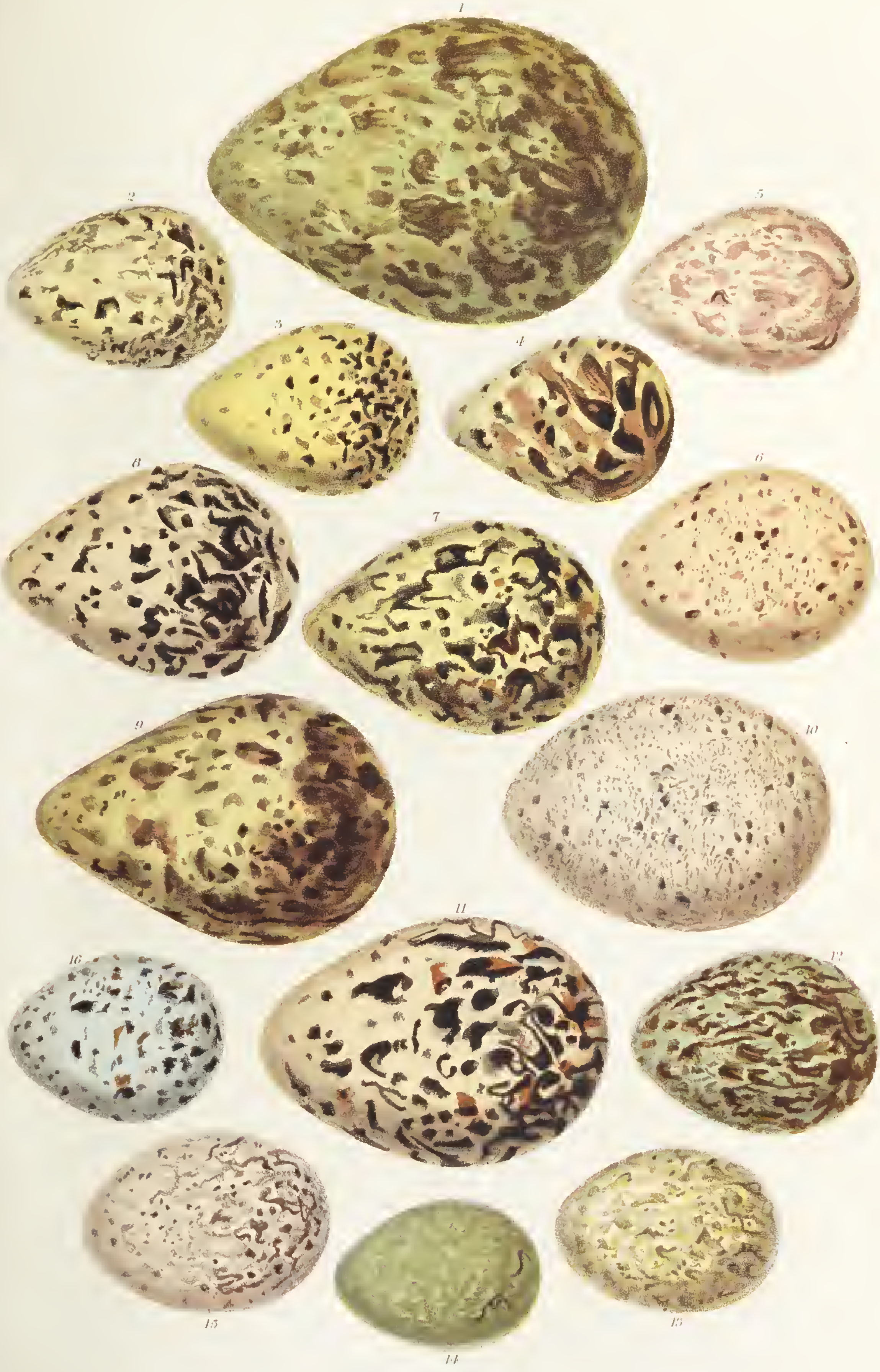
THE WHITE-TAILED WHEATEAR.

The White-tailed Wheatear (*Dromolœa-Saxicola-leucura*) is about seven inches and a quarter long, and eleven and three-quarters broad; the wing measures three inches and two-thirds, and the tail two inches and three-quarters. The plumage is of an uniform rich black; the wing-quills are grey towards their roots, and a band of dazzling white adorns the extremity of the tail. The female is deep brown, but similar to her mate in appearance. The young male and female respectively resemble the father and mother, but are paler. This species inhabits Southern Europe, and almost invariably resorts to its most mountainous districts. In Spain it is particularly numerous, and is also frequently seen in Southern Italy, Greece, and North-western Africa. In the latter portion of the globe and in Asia it is replaced by several nearly allied species. In all these various regions it shows a decided preference for barren heights and rocky precipices, and is as constantly met with on rugged peaks, at an altitude of 500 feet above the sea, as upon the masses of dislodged stone that strew the declivities of the mountains. The darker the colour of the rock, the more dreary and desolate the situation, the more attractive it appears to be, as the blackness of the stone accords well with the dusky plumage of the birds, and renders concealment comparatively easy.



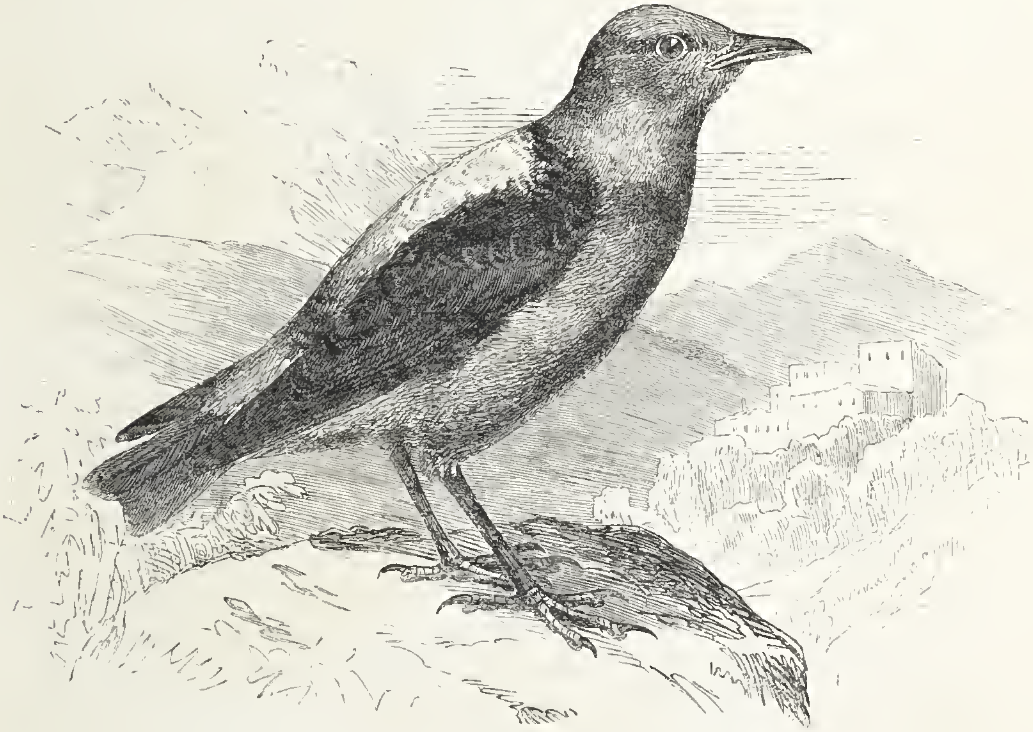
THE EARED STONE CHAT (*Saxicola aurita*).

Those who have ventured to scale the rugged heights and steep precipices frequented by these birds, are often startled by the sound of their clear, sweet voices, as they suddenly salute the ear in situations apparently destitute of animal life, whilst those whose patience will permit them to follow the sound until they come to the spot upon which a pair have taken up their abode, will behold a performance that richly repays the trouble of a tedious climb. Upon a ledge or platform of rock he will see the male bird either tripping lightly around the open space, or executing a regular



1. Curlew (*Numenius Arquata*).—2. Sandpiper (*Totanus Hypolencos*).—3. Ringed Plover (*Charadrius Hiaticula*).—4. Dunlin (*Tringa variabilis*) 5. Land Rail (*Crex pratensis*).—6. Water Hen (*Gallinula chloropus*).—7. Lapwing (*Vanellus cristatus*).—8. Redshank (*Totanus calidris*)—9. Godwit (*Limosa melanura*).—10. Coot (*Fulica atra*).—11. Oyster Catcher (*Hæmatopus ostralegus*).—12. Rook (*Corvus frugilegus*).—13. Magpie (*Pica caudata*).—14. Jay (*Garrulus glandarius*).—15. Chough (*Fregilus graculus*).—16. Jackdaw (*Corvus monedula*).

dance, with wings and tail outspread, accompanying the movements of his feet and body with a continuous flow of song, and bowing his head repeatedly: this entertainment being varied by rising suddenly into the air, and sinking again rapidly, with open pinions, to the ground. Upon one occasion, whilst journeying over the Sierra de los Anches, we came upon a pair of these birds, seated near to a nest containing their unfledged young. The terrified female immediately began flitting from rock to rock, while her mate at once commenced dancing, tripping gracefully about, and singing with all his power, as though with the idea of riveting our attention on himself, and thus averting danger from his little family. We could not find it in our hearts to render the wily stratagem abortive, so contented ourselves with a hasty glance at the nest, and left the spot, followed by a loud song of triumph and rejoicing from the anxious father. The nest, which is placed in holes in the rock, is not commenced until the end of April or beginning of May. The exterior is formed of fibres and grass, woven firmly together, the interior being carefully lined with a layer of goats' hair. The eggs are of a pale greenish blue, marked violet or reddish, but their pattern is very variable; they are from four to six in number: in Spain we have occasionally found as many as seven in a brood. The young are reared upon insects, and are no sooner fledged than they may be seen perching upon the rocks or stones, watching their parents as they pursue flies or other insects destined to fill their craving beaks. Meanwhile, should any unusual sight or sound attract the attention of the vigilant father, he instantly warns his brood by a peculiar cry that they must at once seek shelter in the neighbouring holes and fissures, and recalls them with the same note when they may again venture forth. It is only after the moulting season, which continues throughout July, August, and September, that the young withdraw themselves from the protection of their parents, in order to seek a mate and begin life on their own account.



THE STONE THRUSH, OR ROCK WAGTAIL (*Petrocincla-Turdus-saxatilis*).

The STONE THRUSHES, or ROCK WAGTAILS (*Petrocincla*), are comparatively large birds, recognisable by their slender body and strong, awl-shaped beak, which is broad at its base; the upper mandible is slightly arched, and curved at its tip; the tarsi are armed with very decidedly bent claws; the wing is long, its third quill exceeding the rest in length, while the tail is short, and almost straight at its extremity. The plumage is smooth, bright-tinted, and sometimes much variegated.

THE STONE THRUSH, OR ROCK WAGTAIL.

The STONE THRUSH, or ROCK WAGTAIL (*Petrocincla-Turdus-saxatilis*), is a magnificently-coloured bird, about eight inches long and fourteen broad. The head, face, part of the throat, nape, and rump are of a beautiful blueish grey, the entire under side is bright rust-red, the quills are blackish brown, the shoulder-feathers deep grey or slaty black; the two centre tail-feathers are dark grey, and those at the exterior rust-red. In autumn all the small feathers have light edges. The female is of a pale brown, spotted with a still lighter shade on the upper part of the body, whilst the rust-red feathers on the under side are darkly bordered: the throat is white. In both sexes the eyes are reddish brown, the beak pale black, and the feet of a reddish hue; the young resemble the mother. These birds frequent all the mountain regions of Southern Europe, but are also known to breed in some part of Austria, in the Tyrol, along the course of the Rhine, and occasionally in Bohemia and in the Hartz Mountains: in Italy and Greece they are especially numerous, and everywhere appear to prefer the rocky valleys lying immediately at the foot of mountain ranges to the precipices or towering heights occupied by the group last described.

The Rock Wagtails generally appear in Europe about April or May, and almost immediately commence their preparations for breeding. Their nests, usually concealed with great cunning in such holes in the rock or ground as are almost inaccessible, are made of twigs, straw, moss, or grass, heaped roughly together to form the outer wall, the cup-shaped interior being neatly lined with a variety of elastic materials, selected with great care. The delicate blueish green eggs (see Fig. 24, Coloured Plate IV.) are from four to six in number. We have not as yet been able to ascertain whether the male relieves his partner in the work of incubation, or contents himself with amusing her by a kind of dance, performed with ruffled streaming plumage and half-closed eyes, in which he delights to indulge at this season of the year. Both parents, however, assist in tending the young flock, who are reared on the same kinds of insects as form the staple food of the adults; the latter also devour snails and worms, and during the autumn consume large quantities of berries and fruit, including grapes. Their winter migrations take place in September, and often extend over a large portion of Northern Africa; indeed, we have often seen them in the vicinity of the Blue River. In disposition the Rock Wagtail is cautious, sprightly, and restless, passing almost the entire day in active exercise; its flight is extremely light and beautiful, and so rapid as to enable it to seize an insect on the wing; unlike most of the members of its family, it generally flies in a direct line, and, after describing a few circles in the air, hovers awhile before perching. Upon the ground its movements alternate between a tripping step, accompanied by repeated bowings of the head, and the dancing movement alluded to above. Its voice is pleasing, flute-like, and capable of imitating a great variety of notes and sounds; it is for this reason unusually attractive when caged. Count Gourcy tells us that it soon becomes so tame as to greet its master with a song, and testifies its affection by a variety of pretty tricks.

We must not omit to mention one strange propensity to which this species is addicted when in captivity, during the season at which its kind usually migrate. At that time of the year it seems seized with attacks of perfect frenzy, rushes round its cage, leaps about, and utterly refuses to take any food that is not forced upon it. This state of excitement only continues for from eight to ten days, and leaves the bird in its ordinary state of health. Throughout the whole course of the attack the little prisoner exhibits a degree of terror which is quite inexplicable, at sights and sounds that at other times would scarcely attract its attention.

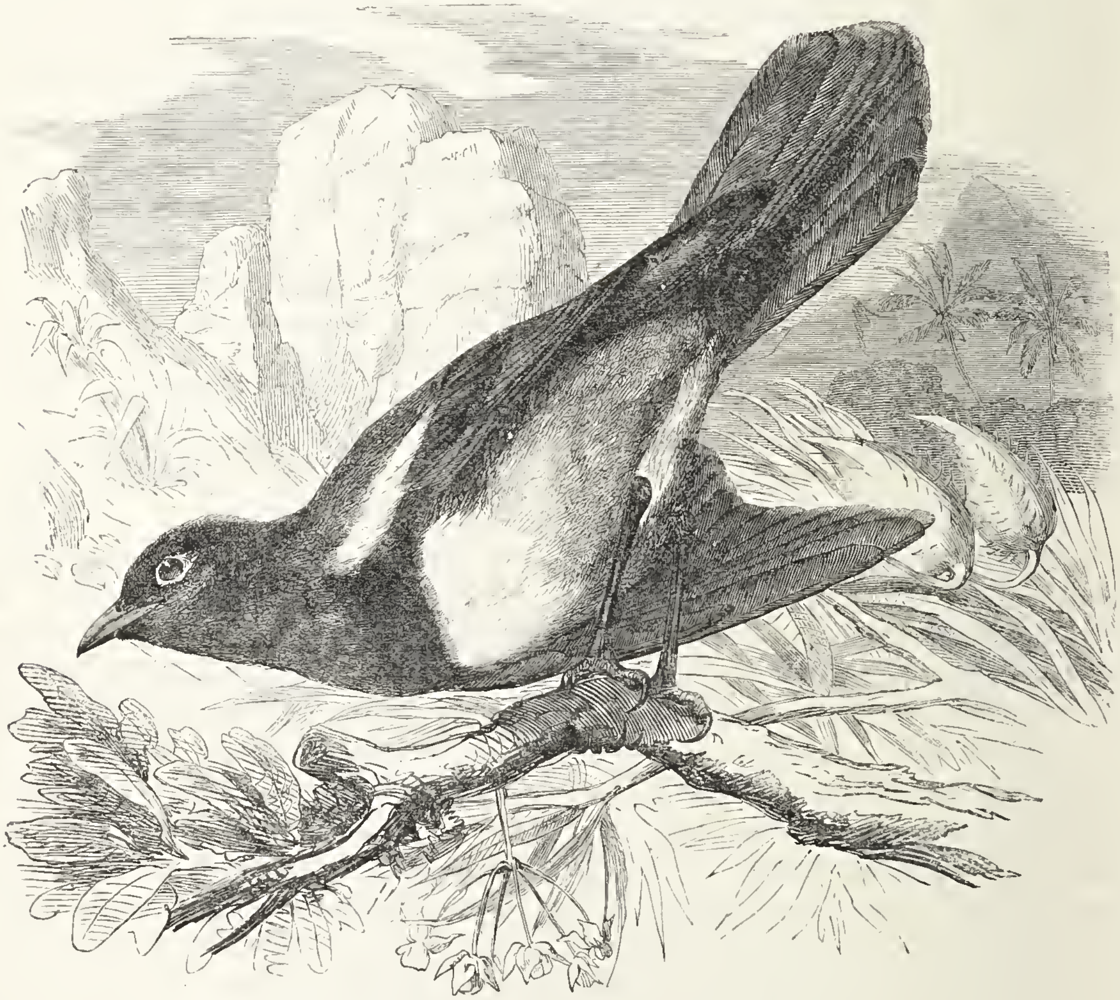
THE BLUE ROCK WAGTAIL, OR BLUE THRUSH.

The Blue Rock Wagtail, or Blue Thrush (*Petrocincla cyana*), is rather larger than the species last mentioned, being from eight inches and three-quarters to nine inches and a half long, and fourteen broad; the wing measures five and the tail three inches and a half. The plumage of the male is of an uniform greyish blue, and the quills and tail-feathers edged with blue. The female is blueish grey upon the upper part of the body, the throat being decorated with light reddish brown spots, each of which is surrounded by a dark line; the feathers on the under side are edged with brownish white, and marked with dark brown crescent-shaped patches; the quills and tail-feathers are also dark brown. The nestlings resemble the mother, but have light brown spots upon the back; the eyes of all are brown, and the beak and feet black. After the moulting season all the feathers in the plumage of the male are of an uniform greyish blue, and the quills and tail-feathers edged with blue.

The Blue Thrushes inhabit the whole of Southern Europe, Northern Africa, and a portion of Central Asia, and are especially numerous in Greece, Dalmatia, Italy, the South of France, Spain, Egypt, and Algiers; during winter a few are occasionally seen in India, but these, no doubt, are stragglers that have lost their way, as, for the most part, these birds remain throughout the entire year in their native land. Like the species last described, they principally occupy rocky valleys and mountainous regions, but are also often to be seen about towns and villages, where they perch upon steeples, roofs, or lofty walls; in Egypt they frequently dwell within the ruins of ancient temples. Although sprightly and active, they are remarkably unsocial, and exhibit a positive dislike to the society not only of man and of birds in general, but of their own kind. During the period of incubation alone do they associate even in pairs; at other seasons each leads an entirely independent life, and exhibits active hostility to every other member of the feathered creation. The flight of this species is much more continuous than that of its congeners, and it usually hovers before perching: like the Thrush, it often soars into the air when about to pour forth its song. Upon the ground it moves with great ease and rapidity. The voice of the Blue Thrush, though inferior to that of the Rock Wagtail, is pleasing, and so flexible as readily to imitate the notes of other birds. The evolutions performed by the male for the delectation of his mate are even more comical than those indulged in by the *Petrocincla saxatilis*, as the little creature inflates his body until it is almost as round as a ball, bows his head, and continually brandishes his tail aloft whilst engaged in going through his dancing steps. The nest is situated in holes in rocks, walls, and ruins, or upon lofty towers or steeples, and is rudely formed of grass; nevertheless, its flat interior is neatly lined with fibres. The four oval-shaped eggs which compose a brood are laid at the beginning of May. These are of a glossy, greenish blue, faintly spotted with violet-grey, and more distinctly with reddish brown; unspotted eggs are also occasionally laid. In Italy, Malta, and Greece, the Blue Thrush is especially esteemed as a domestic favourite, and commands a high price. Wright tells us that in Malta particularly, from fifteen to twenty dollars are frequently paid for a good singer, and that as high a sum as fifty dollars has been given for an unusually gifted specimen. In Malta, such of the lower orders as keep these birds fasten a piece of red cloth to the cage, in order to protect its inmate from the much-dreaded evil eye. Owing to the extreme care with which the nests are concealed, and the unusual timidity displayed by this species, its capture is attended with great difficulty; indeed, none but the most wary and patient of sportsmen can hope to obtain an adult bird.

THE BUSH WARBLER.

The Bush Warbler (*Thamnolæa albiscapulata*), an inhabitant of the Abyssinian mountains, possesses a short, decidedly curved beak, slightly pointed wings, in which the fourth quill exceeds the rest in length, a comparatively long and rounded tail, and short feet; its length is eight inches, and its breadth one foot and three-quarters of an inch. The wing measures four inches and one-third, and the tail three inches and three-quarters. The plumage of the male is of a blueish black upon the head, throat, and upper part of the breast, back, wings, tail, and legs; the belly and lower breast are bright rust-red; a band that divides the upper and lower parts of the breast, and the feathers on the small wing-covers are snow-white; the tail-feathers are rust-red on both sides, and tipped with black. The females and young are without the white patches on the breast and wings.



THE BUSH WARBLER (*Thamnolæa albiscapulata*).

We had many opportunities of observing these birds at Habesch, and saw them constantly in the neighbouring mountains. They lived almost invariably in pairs, and frequented rocks, stones, trees, or the surface of the ground, with equal impartiality. Upon the rocks they conduct themselves after the manner of the Stone Thrush: whilst sporting upon the trees, they hang from the trunk, as they search the bark for grubs, or perch on the very topmost bough, and pour forth their clear and joyous song. We were unable to make any observations respecting their breeding and nidification.

The THRUSHES (*Turdi*) constitute a very numerous family, whose various members are spread over the whole surface of our globe. These birds closely resemble each other in form and habits, although they differ considerably in size; for whilst some have the dimensions of a Pigeon, the smaller species are no larger than the Warblers we have just described. All have more or less slenderly-formed bodies; the beak is almost straight, and of moderate length, slightly curved along the culmen of the upper mandible, and incised at its tip; the tarsus is slender, and, like the toes, of medium size; the claws, on the contrary, are large. The wings, in which the third and fourth quills exceed the rest in length, are long and pointed; the tail is generally moderately long, and either quite straight, or slightly rounded at its extremity. The plumage is soft, somewhat lax, and very various in its coloration; the sexes are usually similar in appearance, and the young are adorned with spots.

Our space forbids our entering into a particular account of all the European Thrushes, and we can therefore only describe a few of those most commonly known. Of the eighty-one species with which we are acquainted, two inhabit the northern tracts of our globe, whilst fifteen are met with in India and the adjacent countries. There are nine in Africa, five in Australia, and twenty-seven in South America. Of these, the Red-winged Thrush (*Turdus fuscatus*), the Red-throated Thrush (*Turdus ruficollis*), the Pale Thrush (*Turdus pallens*), the Siberian Thrush (*Turdus Sibericus*), the Wandering Thrush (*Turdus migratorius*), the Hermit Thrush (*Turdus solitarius*), Wilson's Thrush (*Turdus Wilsoni*), Swainson's Thrush (*Turdus Swainsoni*), Dwarf Thrush (*Turdus minor*), the Soft-feathered Thrush (*Turdus mollissimus*), the Black-throated Thrush (*Turdus atrogularis*), and the Ground Thrush (*Turdus varius*) are all met with in Europe; the four first-mentioned of these thirteen species come from Siberia, the next in order from North America, the two last but one from Southern Asia, and the Ground Thrush (*Turdus varius*) from Australia. The members of this family inhabit every variety of climate, and make their home indifferently within the depths of tropical forests, or under the shelter of the pines and firs that frequently skirt the glaciers of mountain ranges, amidst the rich woodland pastures that adorn highly-cultivated tracts, or upon the sparsely scattered shrubs that draw their scanty means of existence from the burning sands or arid soil of vast steppes. Some few species remain during the entire year within the limits of their native lands, while by far the greater number exhibit such a propensity for wandering about to see the world as is almost without a parallel in the whole feathered creation. All are eminently endowed, and lively and active in their disposition; their flight is remarkably swift, but varies considerably in the different species; that of the Song, Red, and Ring Thrushes being the swiftest and most graceful, whilst that of the Missel and Black Thrushes is very feeble, owing to the comparative shortness of their pinions. All, however, are equally adroit in hopping over the surface of the ground, or climbing amid the trees, and they are all capable of springing with remarkable facility, aided by their wings, to a distant branch. Their sight is so keen as to enable them to detect the smallest insect at a great distance; and their sense of hearing so delicate as to warn them of the approach of danger long before it has been perceived by the other inhabitants of their native woods, who at once seek safe shelter when they hear the warning cry of their more acute and vigilant companions. To this superior sagacity is no doubt attributable the eager desire exhibited by Thrushes to investigate any new or striking object: they, however, take good care to keep at a safe and respectful distance, even while carrying on their examination with the most eager attention. Although extremely quarrelsome—we might almost say vicious—in temperament, the members of this family are eminently social, and constantly assemble in large parties, comprising not only those of their own race, but a variety of other birds. Towards man they appear to feel but little attraction, and are quite acute enough readily to distinguish friends from enemies. As regards their vocal powers, the different groups are somewhat unequally endowed, though the notes of all are in many respects very similar. The song of the "Nightingale of the North," as the Singing Thrush is called in Norway, must certainly be regarded as excelling that of any other species; whilst that of the Missel and Juniper Thrush are also remarkable for great sweetness and variety of tone; of the Hermit Thrush (*Turdus solitarius*) Audubon speaks with great enthusiasm.

Unlike most other birds, the Thrushes do not accompany their notes with any description of movement or gesticulation, but sit perfectly quiet and almost motionless during the whole song; one male has no sooner perched himself on a conspicuous branch, and commenced singing, than he is answered by all those in the neighbourhood, as they hurry to the spot to join in the performance, and share the admiration they evidently expect it will excite. Insects, snails, and worms afford them the means of sustenance during the summer, these being principally obtained from the surface of the ground; they also greedily devour berries, some preferring one sort and some another. Thus the Missel Thrush constantly seeks the fruit of the mistletoe, and for this reason is popularly supposed to bear its seeds from one spot to another; while the Ring Thrush consumes whortleberries in such quantities after the breeding season that, according to Schauer, its flesh acquires a blue, and its bones a red tinge. This very decided predilection for particular fruits and berries renders these birds very troublesome in vineyards and orchards, and brings down upon them severe retribution at certain seasons of the year.

Such groups as inhabit the north rarely commence breeding before June, whilst others usually lay within a very short time after their return to their native lands. The situations of the nest also vary considerably, according to the localities in which they are built.

THE MISSEL THRUSH.

The MISSEL THRUSH (*Turdus viscivorus*) is about ten inches long, and from sixteen inches and a half to seventeen and a half broad; its wing measures from five inches and a half to five inches and three-quarters, and the tail from four inches to four inches and a quarter. Upon the upper part of the body the feathers are deep grey, the under side is whitish, marked on the throat with triangular, and on the other portions with kidney-shaped brownish black spots; the quills and tail are brownish grey, bordered with greyish yellow; the eye is brown, the beak dark, and the feet light horn-colour. The female resembles her mate, but is somewhat smaller; the feathers on the under side of the young are spotted with black, and the wing-covers bordered with yellow. This species is found throughout the entire continent of Europe, and is numerously met with in Great Britain. In Wales it is popularly known as "Penn-y-llwya," or "Master of the Coppice," on account of the overbearing and quarrelsome disposition it displays. In England it is often called the "Storm Thrush," from the fact that its voice is constantly to be heard before a storm of wind or rain. Such of these birds as inhabit the most northern portions of our continent wander somewhat further south as winter approaches, whilst those that occupy more genial latitudes remain throughout the entire year in their native lands. Some few are occasionally known to stray as far as North-western Africa. Districts abounding in lofty trees or pine and fir forests are the localities they prefer. The nest is formed of moss, stalks, lichens, and grass; the outer wall being frequently coated with a layer of mud, and the interior neatly lined with fine grass and similar materials. (The egg is represented in Fig. 12, Coloured Plate XVI.)

The voice of the Missel Thrush resembles that of the Blackbird. "The male," says Mudie, "is not a mere idle songster; he is equally vigilant and bold in the defence of his family. The call-note he utters in case of danger—and which is answered by the female as if she were expressing her confidence of safety while he is on the watch—is harsh, grating, and has the tone of a note of defiance. With the Missel Thrush this defiance is no idle boast, for the sneaking Magpie, the light-winged Kestrel, and even the Sparrow Hawk, are at those times compelled to keep their distance, as the Thrush is too vigilant to be taken by surprise, and under the sprays where these birds contend with him on equal terms he keeps them all at bay. Nor is he the guardian of his own family only—he is in some measure the warder of the whole grove, and when the harsh but shrill sound of his bugle-note of alarm is heard, all the warblers take heed of the danger, and the chorus is mute until he again mounts the highest branch and raises the song of thankfulness for deliverance."

THE SONG THRUSH.

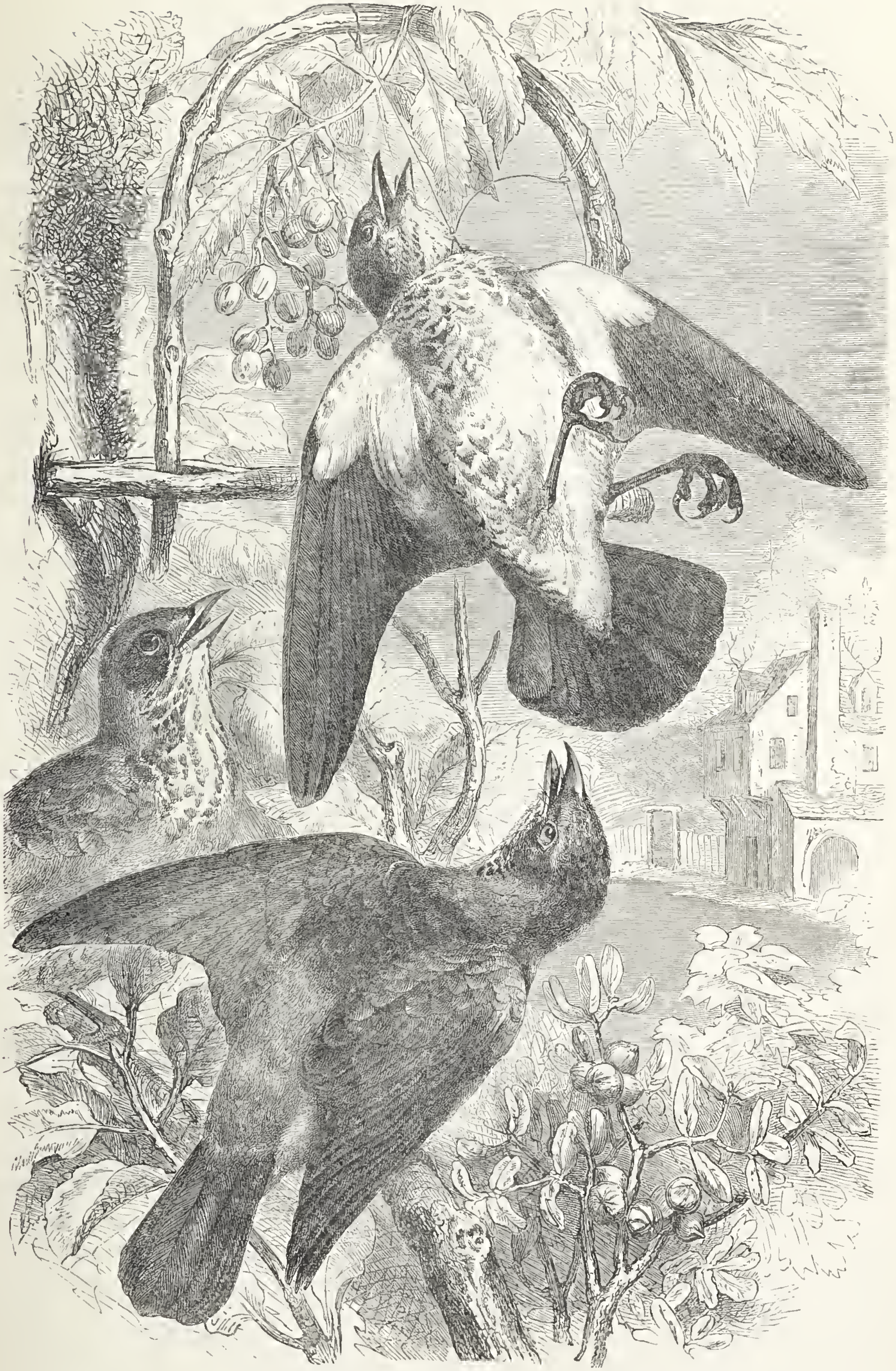
The Song Thrush (*Turdus musicus*) is considerably smaller than the Missel Thrush, its length being eight inches and a half, and its breadth twelve and three-quarters; its wing measures four inches and one-sixth, and its tail three inches and a quarter. The upper portion of the body is olive-grey, the under side yellowish white, marked with triangular oval brown spots, which are less numerous on the belly than in the species above described; the lower wing-covers are also palish yellow, instead of white, and the feathers on the upper covers tipped with dirty reddish yellow. The sexes differ only in their size; the young are recognisable by the yellowish streaks and brown spots on the tips of the feathers of the upper part of their body. Like the Missel Thrush, this species inhabits the whole of Europe, being, however, especially numerous in its extreme north, and rarely breeding in the most southern portions of the continent, which are usually only visited during the winter months; it is also frequently met with in China, and during its migrations wanders as far as North-western Africa, but is rarely seen in the north-eastern provinces of that continent. Notwithstanding the very quarrelsome disposition usually displayed by these birds, many interesting anecdotes have been recorded concerning the great affection they display towards each other. Amongst these Yarrell mentions a touching instance, related by Mr. Knapp:—"We observed," says the latter, "two common Thrushes frequenting the shrubs on the green in our garden; from the slenderness of their forms and the freshness of their plumage, we pronounced them to be birds of the preceding summer. There was an association of friendship between them that called attention to their actions. One of them seemed ailing or feeble from some bodily accident, for, though it hopped about, it appeared unable to obtain a sufficiency of food. Its companion, an active, sprightly Thrush, would frequently bring it worms or bruised snails, when they mutually partook of the banquet; the ailing bird would then wait patiently, understand the actions, and expect the assistance of the other, and advance from his asylum on its approach. This procedure was continued for some days, but after a time we missed the fostered invalid, which probably died, or, by reason of its weakness, met with some fatal accident." (The egg of the Song Thrush is shown in Fig. 14, Coloured Plate XVI.)

THE FIELDFARE, OR JUNIPER THRUSH.

The Fieldfare, or Juniper Thrush (*Turdus pilaris*), is ten inches long and sixteen and a half broad; the wing measures five and a half and the tail about four inches. The plumage of this species is unusually variegated: the head, nape, and rump are deep grey; the upper part of the back and region of the shoulder dull chestnut-brown; the quills and tail-feathers black, the former and the feathers of the wing-covers being grey upon the outer web and tip; the exterior tail-feathers are bordered with white; the front of the throat is dark reddish yellow, spotted longitudinally with black; the feathers on the breast are brown, with a whitish edge; the rest of the under side is quite white; the eye is brown, the beak yellow, and the foot dark brown. The female is somewhat paler than her mate.

These birds mostly live and breed in the extensive birch forests that abound in Northern Europe, and usually make their appearance in the central portions of that continent late in the autumn, rarely wandering as far as its extreme south. They generally appear in Great Britain in large flocks about March, when, should the season permit, they at once spread themselves over the fields in every direction in search of insects, or if these have all disappeared, seek the berries that constitute their principal food in our hedges and gardens. But should the weather prove so exceptionally cold as to deprive them of the latter means of support, they are compelled to wander still farther south, returning, however, to Great Britain again before the end of the winter. Under ordinary circumstances, they remain with us till May, and have occasionally been known to breed in Yorkshire, Kent, and some parts of Scotland. Mr. Hewitson thus describes the habits of the Fieldfare when preparing its nest:—"After a long ramble through some very thick woods, our attention was attracted by the harsh cries of several birds, which we at first supposed to be Shrikes, but which afterwards proved to be Fieldfares. We were soon delighted by the discovery of several of their nests, and were surprised to find them—so contrary to the habits of other species of the genus *Turdus* with which we are acquainted—breeding in society. Their nests were at various heights from the ground, from four feet to thirty or forty feet, or upwards; they were for the most part placed against the trunk of the spruce fir; some were, however, at a considerable distance from it, upon the upper surface, and towards the smaller end of the thicker branches: they resemble most nearly those of the Ring Ouzel; the outside is composed of sticks and coarse grass and weeds, gathered wet, matted with a small quantity of clay, and lined with a thick bed of fine dry grass. None of them as yet contained more than three eggs, although we afterwards found that five was

THE SONG THRUSH (*Turdus musicus*).

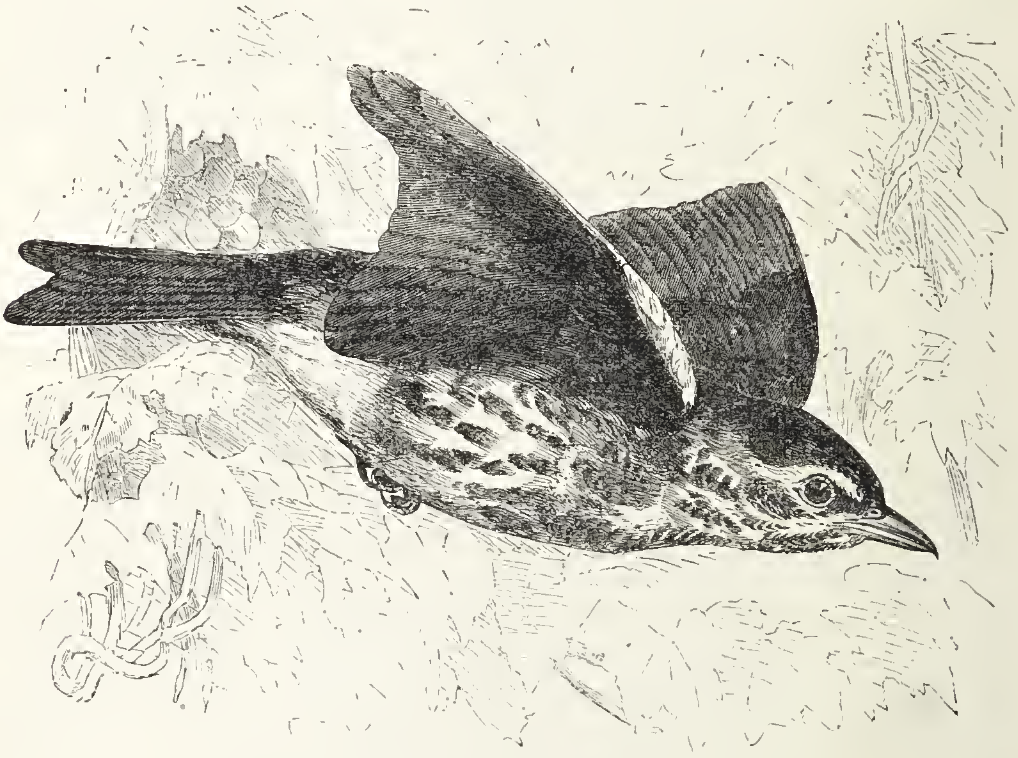


FIELDFARES.

more commonly the number than four, and that even six was very frequent. The eggs are very similar to those of the Blackbird, and still more to those of the Ring Ouzel."

THE REDWING.

The REDWING (*Turdus iliacus*) is eight inches and a half long and thirteen and a half broad. Its wing measures four and a half, and tail three and a half inches. Upon the upper part of the body the plumage is of a greenish brown, the under side whitish, the sides of the breast bright rust-red, and the throat yellowish, marked all over with triangular and round dark brown spots. The female is of a lighter colour than her mate. The back of the young is greenish, spotted with yellow, and their lower wing-covers rust-red; the eyes of all are reddish brown; the beak black, except at the base of the lower mandible, which is grey; the foot is of a reddish hue. This species is also an inhabitant of Northern Europe, but usually appears in the more southern portions of the continent at the close of autumn. Its winter migration extends as far as Northern Africa; it is also met with in Asia, but has never, we believe, been seen in an easterly direction beyond Irkutzk.



THE REDWING (*Turdus ilacus*).

It generally arrives in Great Britain about October, appearing in large flocks; and great numbers frequently perish, should the winter be extremely severe. "The Redwings," says Yarrell, in his excellent "History of British Birds," "are much less inclined to feed on berries than most of the other species of this genus, and should the resources obtained by their search on the ground be closed against them by long-continued frost and snow, the Redwings are first to suffer. During such severe seasons as in 1799, 1814, and 1822, hundreds have been found almost starved, alike unable to prosecute their journey south to more congenial countries, or to bear the rigour of this." Whether such mortality resulted from the intensity of the cold, or the long continuance of snow upon the ground, may be matter for speculation.

THE RING OUZEL, OR RING THRUSH.

The Ring Ouzel, or Ring Thrush (*Turdus torquatus*), is ten inches long and sixteen broad, the wing measures five and a half, and the tail more than four inches. The plumage of the male, with the exception of a broad, crescent-shaped, white spot upon the breast, is of a pure black, marked with faint crescent-shaped spots, formed by the light edges of the feathers; the quills and wing-covers are shaded with grey, and bordered with brownish grey; the tail is of an uniform brownish black, with the exception of its two exterior feathers, which are surrounded by a delicate line of greyish white. The female is greyer than her mate; all the borders to the feathers are broader; moreover, the crescent on her breast is only slightly indicated, and of a dull grey hue. The feathers upon the back of the young bird are dark, with a light edge, and partially streaked with light reddish yellow on the shafts; the throat is pale reddish yellow, spotted with a deeper shade; the breast, which is of a reddish hue, is marked with round spots, whilst those upon the greyish yellow belly are crescent-shaped. The eye is brown, the base of the lower mandible reddish yellow, the rest of the beak black; the foot is blackish brown. The Ring Thrush principally frequents the highest mountain ranges of Europe, but it is met with throughout the highland countries during its migrations, and often wanders as far as the Atlas Mountains. This species has been classed by some ornithologists as the representative of a separate group, under the name of *Thoracocinela*, but, in our own opinion, it can only be regarded as a connecting link between the Thrushes and Blackbirds. (The egg of the Ring Ouzel is represented in Fig. 15, Coloured Plate XVI.)

This species arrives in Great Britain about April, and is not common. Mr. Mudie informs us that cold moors, stony places, where a good deal of water falls, and where there are springs and lakes, are the nesting ground of the Ring Ouzel. When startled by anyone coming suddenly upon them, they utter the same alarm-note as the Blackbird. Their short sweet song resembles that of the Missel Thrush, and is given forth from some low rock, or elevated stone. The nest varies a little with the situation. A plant or bush, especially if against a bank, usually has the preference; but a tuft of grass or heath, or even the projecting part of a massy stone, is often employed. The nest is formed of moss and lichen, plastered with mud, and lined with dry soft grass. The eggs are four, rarely six in number, about the size of those of the Blackbird, but rather greener in tint, and the spots more decidedly marked.

THE BLACKBIRD.

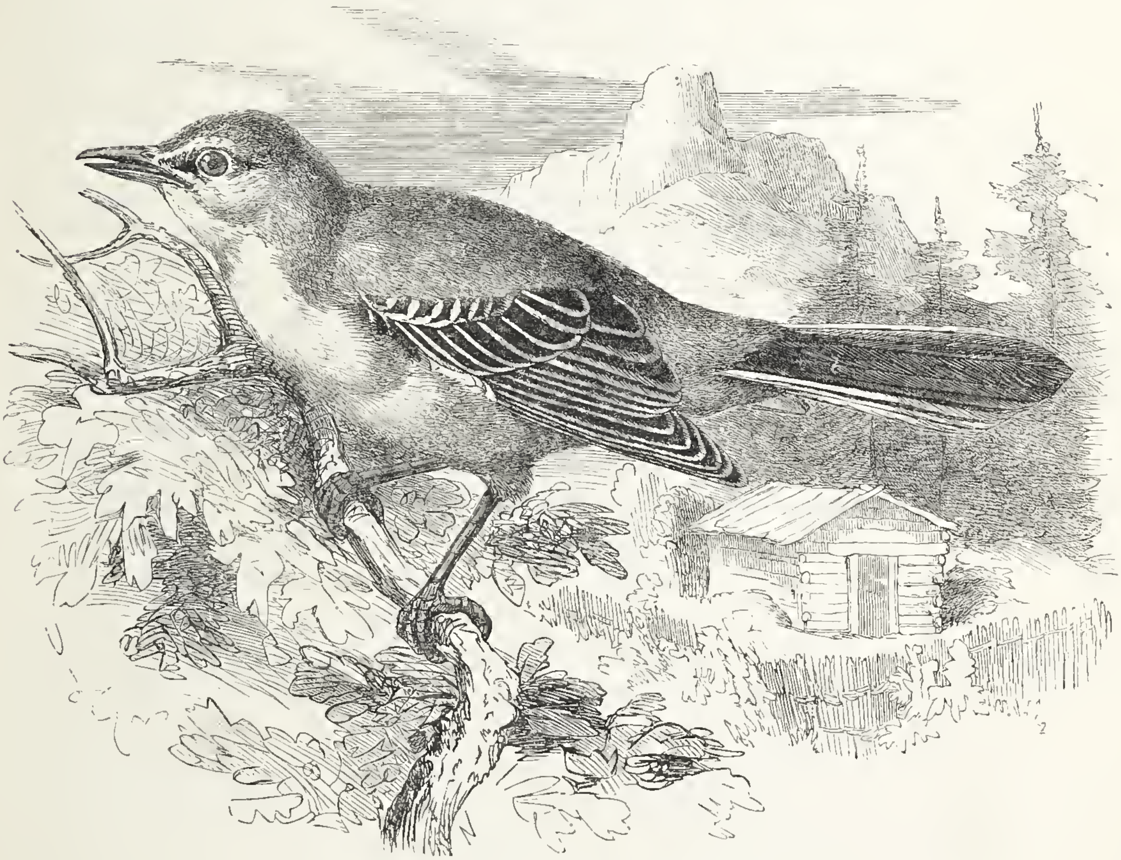
The Blackbird, Black Thrush, or Merle (*Turdus merula*), differs from the species above described in the comparative shortness of its blunt-shaped wings (in which the third, fourth, and fifth quills are nearly of equal length), and still more decidedly in its mode of life. Its length varies from nine and three-quarters to ten inches, and its breadth from thirteen and a half to fourteen inches; the wing measures from four inches and one-third to four and a half, and the tail four and a half inches. The plumage of the adult male is of an uniform black, the eye brown, the beak and edges of the eyelid bright yellow, and the legs dark brown; in the adult female the upper part of the body is pure black, the under side blackish grey, edged with light grey; the throat and upper part of the breast are greyish black, but spotted with white and rust-red; the young are blackish brown upon the back, spotted with yellow upon the shafts, and rust-red, spotted with brown on the under side.

The Blackbird is met with extensively from sixty-six degrees north latitude throughout the whole of Southern Europe, and is a permanent resident in Great Britain. Everywhere it frequents moist and well-wooded districts or tracts of underwood, usually remaining from year's end to year's end within the limits of its native land. Only such as reside in the extreme north of the continent migrate, and then rarely beyond the southern parts of Sweden. "The Blackbirds," says Mr. Yarrell, "occupy hedges, thickets, plantations, and woods. They are shy, vigilant, and restless, frequenting the ground under cover of evergreens and other shrubs, that serve to conceal them, and, if disturbed, take wing with a vociferous chattering of alarm, and, after a short flight, turn suddenly into some thick brake or hedgerow to avoid pursuit. The food of the Blackbird varies considerably with the season; in the spring and early part of the summer it consists of the larvæ of insects, with worms and snails; the shells of the latter being dexterously broken against a stone, to get at the soft body within.

THE BLACKBIRD (*Turdus merula*).

As the season advances they exhibit their great partiality for fruit of various sorts, and their frequent visits to our orchards bring upon them the vengeance of the gardener. This bird commences his song early in the spring, and it has been observed that he occasionally sings his best during an April shower. He continues singing at intervals during the summer till the moulting season. Like some other birds gifted with great powers of voice the Blackbird is an imitator of the sounds made by others. He has been heard closely to imitate part of the song of the Nightingale, and three or four instances are recorded of his having been known to crow like a cock, apparently enjoying the sound of the responses made by the fowls in a neighbouring poultry-yard." Mr. Neville Wood mentions an instance in which he heard a Blackbird cackle as a hen does after laying. This species pairs and breeds very early in the spring, generally choosing the centre of some thick bush in which to fix and conceal the nest. The exterior is formed of coarse roots and strong bents of grass, plastered over and interlaced with dirt on the inner surface, thus forming a stiff wall; it is then lined with fine grass. The eggs are four or five, sometimes six in number, of a light blue, speckled and spotted with pale reddish brown (see Fig. 13, Coloured Plate XVI.) Occasionally they are of an uniform blue shade. Their length is one inch and two lines, and their breadth eight lines. The first brood is hatched by the end of March, or early in April.

The MOCKING THRUSHES (*Mimi*) constitute a family nearly allied to the birds above described. They are recognisable by their slender bodies, and short but strong wings, that only extend as far as the base of the long tail, and have the third, fourth, and fifth quills of equal length. The exterior tail-feathers are graduated, the tarsi high, the feet large and powerful, and the claws comparatively weak. The beak somewhat resembles that of the True Thrush, but is much higher and more arched; the plumage, moreover, is unusually soft and lax. Unlike the True Thrushes, the members of this group do not prefer forests or woodlands, but frequent open tracts, marshy districts, or even the sea-coast; and while some seek the retirement of the most isolated situations, others make their home close to the dwellings of man. Such species as inhabit the southern portions of the western hemisphere do not migrate, whilst those from the north, when winter approaches, wander southward as far as the United States or even Central America. All American writers speak with enthusiasm of the song of these birds; and though we are by no means inclined to allow them the



THE MOCKING BIRD (*Mimus polyglottus*).

superiority over their European cousins that has been claimed for them, still we are fully prepared to acknowledge that their vocal powers are eminently fascinating and remarkable.

THE MIMIC THRUSH.

The Mimic Thrush, or Mocking Bird (*Mimus polyglottus*), as the most celebrated species has been called, is nine and a half inches long and thirteen and a half broad; the plumage on the upper part of the body is dark grey, shaded with brown upon the brow and side of the head; the under side is brownish white; the quills and wing-covers are brownish black, and the feet dark brown. The female is browner and darker than her mate, and the white in the tail less pure. Both sexes are alike in size.

The United States of North America must be regarded as the native land of this interesting bird, and from thence, as autumn approaches, it wanders forth to visit the surrounding countries. (The Mocking Birds of Louisiana, however, form an exception to this rule, as, owing to the mildness of the climate, they often remain there throughout the entire year.) This delightful songster generally frequents plantations, gardens, and brushwood, and not only lives but breeds in the immediate vicinity of man; it also prefers sandy plains, the banks of rivers, and the neighbourhood of the sea-coast. On the ground its movements resemble those of the True Thrush, but its flight is undulating, and rarely sustained for any great distance, as the Mocking Bird from time to time takes rest upon a tree before proceeding on its way; moreover, as it flies, the tail is alternately expanded and closed. As regards the wonderful powers of song that have rendered this species so famous, we cannot do better than quote the words of Wilson:—"The intelligence he displays in listening and laying up lessons from almost every species of the feathered creation within his hearing is really surprising, and marks the peculiarity of his genius. To his other endowments we may add that of a voice full, strong, and musical, and capable of every modulation, from the clear mellow tones of the Wood Thrush to the savage scream of the Bald Eagle. While in measure and accent he faithfully follows his originals, in force and sweetness of expression he greatly improves upon them. In his native groves, mounted on the top of a tall bush, or half-grown tree, in the dawn of dewy morning, when the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent over every competitor. The ear can listen to his music alone, to which that of all others seems a mere accompaniment. Neither is his strain altogether imitative. His own native notes, which are easily distinguishable by such as are well acquainted with those of our various song birds, are bold, full, and varied, seemingly beyond all limits. They consist of short expressions of two, three, or at most five or six syllables, generally interspersed with imitations, all of them uttered with great emphasis and rapidity, and continued with undiminished ardour for half an hour or an hour at a time. His expanded wings and tail, glistening with white, and the buoyant gaiety of his action, arrest the eye as his song most irresistibly does the ear; sometimes he sweeps round with enthusiastic ecstasy, mounting and descending as his song swells or dies away, and, as my friend Mr. Bartram has beautifully expressed it, 'He bounds aloft with the celerity of an arrow, as if to recover or recall his very soul expired in the last elevated strain.'

"While thus exerting himself, a bystander destitute of sight would suppose that the whole feathered tribe had assembled together on a trial of skill, each striving to produce his utmost effect, so perfect are his imitations. He many times deceives the sportsman, and sends him in search of birds that perhaps are not within miles of him, but whose notes he exactly imitates; even birds themselves are frequently imposed on by this admirable mimic, and are decoyed by the fancied calls of their mates; or dive with precipitation into the depth of thickets, at a scream of what they suppose to be the Sparrow Hawk."

As may readily be imagined, the sounds imitated by these remarkable birds vary according to the situation in which they live; those that occupy woodland districts naturally repeat the note uttered by their feathered companions, whilst those near a farmyard learn not only to imitate the cries of all its different inhabitants, but reproduce them so perfectly as to deceive the nicest ear. Thus they have been known to summon the house-dog, by whistling like his master; drive a hen to a state of the utmost excitement, by constantly screaming out in such a manner as to lead her to suppose that one of her chicks was in the last agonies; or to scare away a whole flock of poultry by the perfection with which they imitate the cry of one of the many tyrants of the air. The clapping of a mill, a creaking door, the grating of a saw, or, indeed, any of the multitudinous noises heard in a busy household, at once attract their attention, and are simulated with such torturing exactness as often to render the Mocking Bird, when caged, almost unbearable.

Amongst the many enemies to whose attacks this species is exposed, the black snake is one of the most formidable, and frequent and terrible are the battles that ensue between these apparently very unequal combatants.

"Whenever," says Wilson, "the insidious approaches of this reptile are discovered, the male darts upon it with the rapidity of an arrow, dexterously eluding its bite, and striking it violently and incessantly about the head, where it is very vulnerable. The snake soon becomes sensible of its danger, and seeks to escape; but the intrepid defender of his young redoubles his exertions, and, unless his antagonist be of great magnitude, often succeeds in destroying him. All its pretended powers of fascination avail it nothing against the vengeance of this noble bird. As the snake's strength begins to flag, the Mocking Bird seizes and partially lifts it up from the ground, beating it with his wings; and when the business is completed he returns to the repository of his young, mounts the summit of the bush, and pours out a torrent of song in token of victory."

In the southern provinces of the United States the breeding season of this Thrush commences in April, whilst in the northern parts, on the contrary, it does not begin till the end of May. Throughout the whole of this period the male is extremely restless, and endeavours to attract the attention of his mate by the ceaseless activity of his movements, alternately strutting conceitedly about on the ground, with tail expanded and drooping wings, or fluttering, butterfly-like, around the spot on which she is perched, at the same time performing a series of graceful evolutions in the air. The nest, which is formed of dry twigs, tendrils, grass, and wool, thickly lined with delicate fibres, is usually placed at the summit of trees or leafy shrubs, frequently close to habitations, but occasionally also in low bushes and briary clumps growing in comparatively unfrequented and uncultivated spots. Two and sometimes three broods are produced in the year; the first containing from four to six, the second at most five, and the third seldom more than three eggs. These are round in shape, of a light green colour, variously marked with dark brown. The young are hatched by the mother alone, and usually leave the shell in about a fortnight. The two first families grow rapidly, but they do not attain their full size until late in the year. Audubon maintains that, should the parents be disturbed whilst tending their young, they exhibit the greatest anxiety for their safety, and redouble their care and attention. This opinion is, however, in direct contradiction to the idea prevalent in America, that if the Mocking Thrush be alarmed it at once deserts its progeny. During the summer this species lives principally upon insects, which, unlike most Thrushes, it often pursues to a considerable height in the air. In autumn it feeds upon a great variety of berries. When caged it is readily reared upon the food usually given to Thrushes, but should also receive an occasional meal of ants' eggs or meal-worms. Upon this diet it will not only live for a considerable time and become extremely tame, but lay its eggs regularly from year to year.

THE FERRUGINOUS MOCKING BIRD, OR THRASHER.

The FERRUGINOUS MOCKING BIRD, or THRASHER (*Taxostoma rufum*), has a slender body, long wings, a short tail, and a powerful foot. The upper part of the body is brownish red; the under side, reddish white, striped with blackish brown upon the sides and breast; the small feathers on the wing-covers are edged with white, and thus form two light borders to the pinions; the eye is yellow, the beak blueish, and the foot brown. Its length is about twelve inches; this measurement includes the tail, which is nearly six inches. The wing is four inches and one-third.

"This large and well-known songster," says Nuttall, "is found in all parts of America, from Hudson's Bay to the shores of the Mexican Gulf, breeding everywhere, though most abundantly in the northern portions. Early in October these birds retire to the south, and probably extend their migrations at that season through the warmer regions towards the borders of the tropics. From the fifteenth of April till early in May they begin to revisit the Middle and Northern States, keeping pace in some measure with the progress of vegetation. They appear always to come in pairs, so that their mutual attachment is probably more durable than the season of incubation. Stationed near the top of some tall orchard or forest tree, the gay and animated male salutes the morn with his loud and charming song. His voice—resembling that of the Thrush of Europe, but far more powerful and varied—rises pre-eminent amidst all the choir of the forest. His music has all the full charm of originality; he takes no delight in mimicry, and, therefore, really has no right to the name of Mocking Bird. From the beginning to the middle of May the Thrasher is engaged in building his nest, usually selecting for this purpose a low thick bush in some retired thicket or swamp, a few feet from the earth, or even on the ground in some sheltered tussock, or near the root of a bush. It has a general resemblance to the nest of the Cat Bird; outwardly being made of small interlacing twigs, and then layers of dry oak or beech leaves. To these materials generally succeed a stratum of strips of grape-vine or red cedar bark; over the whole is piled a mass of some coarse root fibres, and the finishing lining is made of a layer of finer filaments of the same. The eggs (never exceeding five) are thickly sprinkled with minute spots of palish brown on a greenish ground. In the Central States these birds rear two broods in the year; in other parts of America but one. Both parents display the most ardent affection for their young, and attack dogs, cats, and snakes, in their defence. Towards their most insidious enemies of the human race, when the latter are approaching their helpless young, every art is displayed—threats, entreaties, and reproaches, the most pathetic and powerful, are tried; they dart at the ravisher with despair, and lament the bereavement they suffer in the most touching strains. I know nothing equal to the bursts of grief manifested by these affectionate parents except the accents of human suffering. Their food consists of worms, insects, caterpillars, beetles, and various kinds of berries. The movements of the Thrasher are active, watchful, and sly; it generally flies low, dwelling among thickets, and skipping from bush to bush with his long tail spread out like a fan."

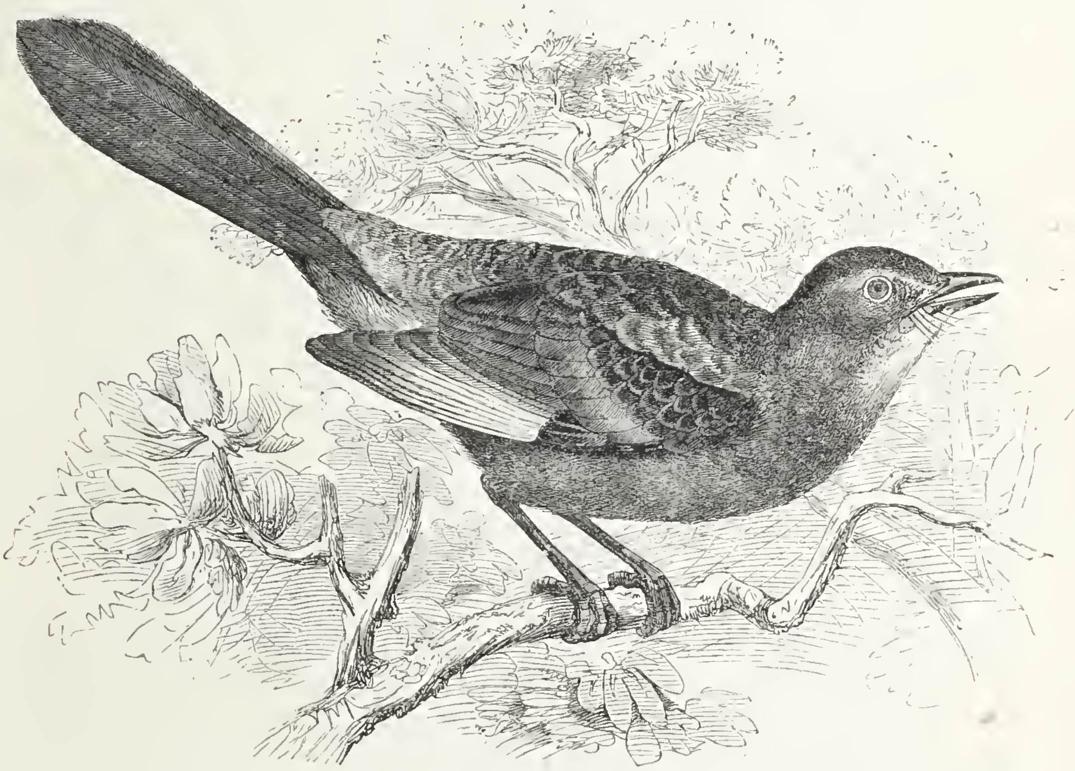
THE CAT BIRD.

The CAT BIRD (*Galeoscoptes Carolinensis*) is almost entirely slate-grey, which is darkest on the back and lightest on the under side; the top of the head is brownish black, the throat light grey, and the lower wing-covers rust-red. Its length is nine inches, the wing four inches, and the tail four inches and three lines. The best account of this bird has been given by Wilson, who has described it at great length.

"The Cat Bird," says that graphic writer, "is very common in the United States, and arrives in the lower parts of Georgia from the south about the twenty-eighth of February, and probably winters in

Florida. About the beginning of May he has already succeeded in building his nest. The place chosen for this purpose is generally a thicket of briars or brambles, a thorn bush, thick vine, or the fork of a small sapling; no great solicitude is shown for concealment, though few birds appear more interested for the safety of their nests and young. The materials employed are dry leaves, or weeds, small twigs, or fine dry grass; the interior is lined with fine black fibrous roots. The female lays four, sometimes five eggs, of an uniform greenish blue colour, without any spots. Two, and occasionally three broods, are raised in the year.

"The manners of this species are lively, and at intervals border on the grotesque. It is extremely sensitive, and will follow an intruder to a considerable distance, wailing and mewing as it passes from one tree to another, its tail now jerked and thrown from side to side, its wings drooping, and its breast deeply inclined. On such occasions it would fain peck at your hand; but these exhibitions of irritated feeling seldom take place after the young have sufficiently grown to take care of themselves. In some instances I have known this bird at once to recognise its friend from its foe, and to suffer the former even to handle the treasure deposited in its nest with all the marked assurance of the knowledge it possessed of its safety; while, on the contrary, the latter had to bear all its anger. The sight of a dog seldom irritates it, but a single glance at the wily cat excites the most painful paroxysms of alarm. It never neglects to attack a snake with fury, though it often happens that it becomes the sufferer for its temerity.



THE CAT BIRD (*Galeoscoptes Carolinensis*).

"The Cat Bird," continues the same author, "is one of our earliest morning songsters, beginning generally before break of day, and hovering from bush to bush with great sprightliness when there is scarce light sufficient to distinguish him. His notes are more remarkable for singularity than for melody. They consist of short imitations of other birds and other sounds; but his pipe being rather deficient in clearness and strength of tone, his imitations fail where these qualities are requisite.

Yet he is not easily discouraged, but seems to study certain passages with great perseverance, uttering them at first low, and, as he succeeds, higher and more freely, nowise embarrassed by the presence of a spectator even within a few yards of him. On attentively listening for some time, one can perceive considerable variety in his performance, in which he seems to introduce all the odd sounds and quaint passages he has been able to collect. Upon the whole, though we cannot arrange him with the grand leaders of our vernal choristers, he well merits a place among the most agreeable general performers.

"In spring or summer, on approaching a thicket of brambles, the first salutation you receive is from the Cat Bird; and a stranger, unacquainted with its note, would conclude that some vagrant orphan kitten had got bewildered in the briars, and wanted assistance, so exactly does the call of the bird sometimes resemble the voice of that animal.

"In passing through the woods in summer, I have sometimes amused myself with imitating the violent chirping or squeaking of young birds, in order to observe what different species were around me; for such sounds, at such a season, in the woods, are no less alarming to the feathered tenants of the bushes than the cry of fire or murder in the streets is to the inhabitants of a large and populous city. On such occasions of alarm and consternation, the Cat Bird is the first to make his appearance, not singly, but sometimes half a dozen at a time, flying from different quarters to the spot. At this time those who are disposed to play with his feelings may almost throw him into fits, his emotion and agitation are so great at the distressful cries of what he supposes to be his suffering young. Other birds are variously affected, but none show symptoms of such extreme suffering. He hurries backwards and forwards, with hanging wings and open mouth, calling out louder and faster, and actually screaming with distress, till he appears hoarse with his exertions. He attempts no offensive means, but he bewails, he implores, in the most pathetic terms with which Nature has supplied him, and with an agony of feeling which is truly affecting. Every feathered neighbour within hearing hastens to the place, to learn the cause of the alarm, peeping about with looks of consternation and sympathy; but their own duties and domestic concerns soon oblige each to withdraw. At any other season the most perfect imitations have no effect whatever on him."

The BABBLERS, or NOISY THRUSHES (*Timaliæ*), constitute a very numerous race, inhabiting Africa, Southern Asia, and other portions of the eastern hemisphere. The members of this family are in many respects nearly allied to the birds above described, but are recognisable by their compact body, short, rounded wings, in which the fourth or fifth quill is the longest; a moderate-sized, broad-feathered, and more or less rounded tail, powerful foot, and comparatively strong, compressed beak, slightly bent at the tip of the upper mandible. The plumage is unusually lax, and of a dusky hue.

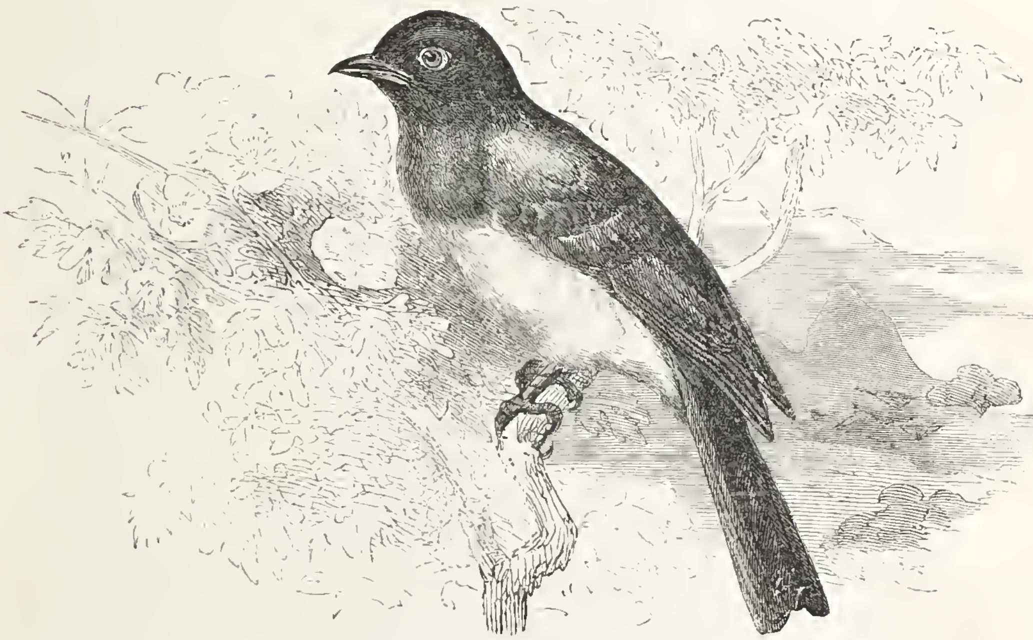
These birds frequent tracts of brushwood or underwood in extensive forests or cane districts, and subsist upon the insects, snails, worms, fruits, and berries that abound in their favourite localities. All are active, restless, and social in their habits, although they rarely assemble in large flocks, and are invariably extremely noisy. Only a few possess good voices. Their powers of flight are by no means great, and rarely enable them to rise as high as the summits of the trees; but they exhibit remarkable agility in skipping in and out amidst the densest foliage.

THE GREY BIRD.

The GREY BIRD (*Pycnonotus arsinoë*) represents a group whose principal characteristics are their middle-sized but strong and slightly-curved beak, powerful foot, moderately long wings, in which the fifth quill is the longest, and somewhat rounded tail. The plumage is lax, and generally, with the exception of the lower tail-covers, of dull appearance. The Grey Bird is about seven and a half inches long and eleven broad, the wing three inches and a quarter, and the tail three inches in length. It is of a deep greyish brown on the back and top of the head. The head and throat are blackish brown, the breast and belly whitish grey; the eye is brown, the beak and feet black. Both sexes are alike in colour.

LE VAILLANT'S GREY BIRD.

Le Vaillant's Grey Bird (*Pycnonotus Vaillantii*) is a very similar but larger species, met with in Arabia and the Cape of Good Hope. The body of this bird, which we have named after the celebrated traveller Le Vaillant, is of a somewhat lighter grey, and the under side of the wing and rump of a beautiful sulphur-yellow. It has been asserted that a third member of this group has been seen in Spain, but all our attempts to discover it have proved unavailing. Africa and Southern Asia must unquestionably be regarded as forming the almost exclusive habitat of the Grey Birds, from whence they but very rarely wander as far as Europe, or even Arabia. They are first met with in any considerable numbers at about twenty-five degrees north latitude. In the north of Nubia they are to be seen on every mimosa hedge, and in Eastern Soudan are more commonly met with than almost any other bird; in the latter country they alike frequent forests and gardens, mountains or plains, but usually seem to prefer such spots as afford a shelter from the sun; for this reason they are constantly found under the leafy branches of the sycamores that abound on the banks of the Lower Nile. Towards man they exhibit no fear, but trustingly take up their abode close to the huts of the natives. Their temperament is cheerful and restless, and their movements upon the ground and among the branches sprightly and active. Their flight, on the contrary, is by no means elegant, and usually consists of a kind of hovering, fluttering motion. From early morning till late in the evening their loud, clear, and often beautiful voices are to be heard almost incessantly, as they hop busily to and fro, gleaning caterpillars or insects from the leaves, pausing ever and anon to expand or elevate the long feathers that decorate the back of the head, and, with body erect, to cast a keen investigating glance on the surrounding buds and blossoms. Whilst the mimosa is in bloom, they are constantly



THE GREY BIRD (*Pycnonotus arsinoë*).

to be seen upon its branches, diving their beaks amidst the yellow petals, in order to obtain the tiny beetles that lurk within, and thereby smearing their heads all over in the most ludicrous manner with the bright golden pollen that is profusely scattered over the stamens of the flowers. During the period of incubation, which in Soudan commences with the rainy season, and, in more northern latitudes, in the months that correspond with our spring, not only the couples, but the settlements of couples that often build upon the same tree live together in the utmost harmony. The nests are always carefully concealed under the foliage, though so slenderly constructed as to be permeable to light; their sides are composed of fine grass and roots, woven together with spiders' webs, and smoothly lined with delicate fibres. The eggs are small, of a reddish white colour, and marked with dark brown and blueish grey spots, some of which form a wreath at the broad end. We were unable to obtain further particulars respecting the breeding of either this or the preceding species. The natives of Northern Africa are far too indolent to attempt to tame these interesting birds, but in India they are much prized, and frequently reared in cages, not, however, on account of their song, but owing to the sport they afford as combatants; indeed, they are regularly trained for the cruel purpose of making them fight. In Ceylon the *Pycnonotus hæmorrhous* is taken young from the nest, and secured by a string to its perch; it is taught to come at its master's call, and when it has learnt the necessary obedience, is confronted with another bird similarly fastened, and the two are then incited to attack each other with such fury as would certainly end in the death of one or both, did not the spectators take care to separate them at the proper moment by means of the strings.

The TRUE BABBLERS (*Timalia*) inhabit Southern Asia, and are distinguishable by their powerful beak, which is decidedly arched and much compressed at its sides, as well as by their strong feet and claws, long hinder toes, short rounded wings, in which the fifth and sixth quills exceed the rest in length, and moderately long, rounded tail. At the base of the beak there is a growth of well-developed bristles.

THE RED-HEADED BABBLER.

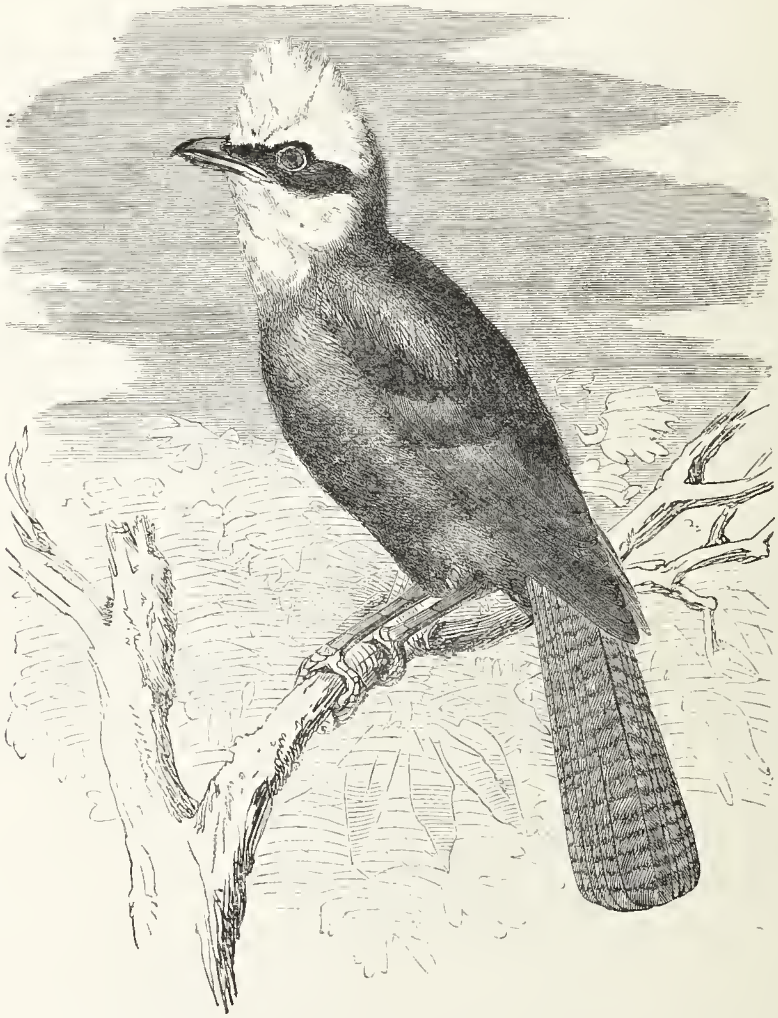
The Red-headed Babbler (*Timalia pileata*) is olive-brown on the wings and tail; the sides of the head and nape are dark grey; the brow and region of the ear white; the top of the head is brilliant rust-red; the throat and breast pure white, the former delicately marked with black; the belly is of a pale reddish hue, shaded with olive-brown upon its sides; the eye is dull red, beak black, and the feet flesh-pink; the body measures six inches and three-quarters, the wing two inches and three-eighths, and the tail two inches and four-fifths. Horsfield, who discovered this species, saw it first in Java, and tells us that its song consists of the five first notes of the gamut, *c, d, e, f, g*, repeated in their proper succession with great regularity. More recent travellers have found it on the continent of India, and from them we learn that the Red-headed Babblers principally frequent tracts of underwood that mark the places where the ancient forests once stood, or districts thickly overgrown with shrubs and bushes, and that they are more numerously met with in highland than lowland regions. Everywhere they live in pairs, and, though they rarely venture forth into the open country, are often to be seen in the early morning, perching on the branches of their leafy retreats, whilst they preen their feathers or dry their wet plumage. Even during the breeding season the male frequently adopts this position, and sits with drooping wings, apparently entirely forgetful, not only that his mate is left solitary, but of everything around him. At other times the somewhat neglectful spouse endeavours to cheer his hard-working partner with his song, accompanying his notes by spreading the long feathers at the back of his head and brandishing his tail aloft. The nest of these birds, which is deep, cup-shaped, and very fragile, is usually formed of leaves woven neatly together, and is placed in a bush at a considerable height from the ground. The eggs, from two to three in number, are white, thickly covered with reddish brown markings of various shades, largest and most numerous at the broad end, and often intermixed with a few dark grey patches, that appear to penetrate deep into the shell.

The HOOK-CLAWED BABBLERS (*Crateropus*), another group of the same family, are recognisable by their strongly-built body, rather long, powerful, and slightly arched beak, which is compressed at its sides; moderate sized, strong feet, armed with formidable hooked and pointed claws; short wings, in which the fourth quill exceeds the rest in length; and long tail, formed of large feathers, and slightly graduated at the sides. The plumage is thick, harsh, and rarely very brightly coloured.

THE WHITE-RUMPED BABBLER (*Crateropus leucopygius*).

THE WHITE-RUMPED BABBLER.

The WHITE-RUMPED BABBLER (*Crateropus leucopygius*) is chocolate-brown on the upper part of the body; the top of the head, face, and rump are white; the feathers on the under side brownish grey, edged with white, this bordering presenting the appearance of crescent-shaped spots; the quills and tail-feathers are marked with a series of dark lines; the eye it deep carmine-red, the beak black, and the feet grey. These Babblers are social in their habits, and are always met with in small parties, numbering from eight to twelve birds. Their flight, which is performed by alternate rapid strokes of the wings and a hovering motion produced by broadly expanding the pinions and tail, is rarely sustained for any great distance, and has no pretence to either grace or speed. In the brushwood, on the contrary, they exhibit a wonderful power of climbing and creeping through dense foliage, such as will bear comparison with that of the Mouse Birds themselves. Few sights are more amusing than that presented by a party of these noisy chatterers, as they fly quite close together from bush to bush, settling on each one in turn, creeping through it in all directions, and screaming violently whenever anything attractive or unusual catches their eye, then, having snapped up as many insects and devoured as many buds and leaves as their appetites require, they re-assemble, and fly off in closely-packed array, to repeat the same process at another spot. We are entirely without particulars either respecting their nidification or manner of breeding.



THE WHITE-TUFTED LAUGHING THRUSH (*Garrulax leucolophus*).

The LAUGHING THRUSHES (*Garrulax*), inhabiting India and Southern Asia, resemble the above-mentioned group so closely in their general appearance as to render any detailed description of their habits mere repetition; we shall therefore content ourselves with the mention of but one species, as the mode of life and habits and general appearance of the group is very similar.

THE WHITE-TUFTED LAUGHING THRUSH.

The White-tufted Laughing Thrush (*Garrulax leucolophus*) is a large bird, about twelve inches long and fifteen and a half broad; its wing and tail both measure five inches. The head—with the exception of the black cheek-stripes—the nape, throat, and breast are pure white, shaded with grey upon the sides; the rest of the plumage is of a reddish olive-brown, deepest in shade on the inner web of the quills and tail-feathers. All the wooded tracts of the Himalayas afford shelter to large numbers of these remarkable birds, and resound with their most peculiar cry, which so closely resembles a hideous laugh as to startle, and, indeed, positively to terrify such as hear it for the first time. Insects, snails, worms, and berries afford them their principal means of subsistence; the former are sought for on the ground or in the foliage, and the latter are gathered from the branches as they hang suspended from the trees. The nest is a mere mass of roots, moss, and grass, placed in a thick bush. The eggs are few in number, and have a pure white shell. Frith gives us an interesting account of the manner in which a very similar species, the Chinese Laughing Thrush (*Garrulax Chinensis*), kills and devours its prey. "This bird," he tells us, "seized a snake about a foot long that was put into its cage, struck it against the ground, bored its head repeatedly with its bill, and then proceeded to eat it, holding the body firmly with his foot whilst he tore it into pieces. Large beetles he treated in a similar manner, and, previous to snapping up a wasp or a bee, always allowed his intended victim to drive its sting repeatedly into his expanded tail; small pieces of cooked flesh he placed between the bars of his cage before proceeding to devour them."

The WATER OUZELS (*Cinclus*) constitute a group whose members, though closely allied to the Thrushes, have been separated from them on account of certain peculiarities by which they are distinguished. They all have slender bodies, which, however, appear stout, owing to the great thickness of the plumage; delicate, almost straight beaks, compressed at the sides and narrow towards the tip; the nostrils are closed by a fold of skin; the feet are high and strong, the toes long, and armed with very hooked and strong claws; the wing is unusually short, much rounded, and almost as broad as it is long; the tail-feathers, which are broad and slightly rounded at the extremity, are so short as to be little more than stumps. The thick, soft plumage is totally unlike that possessed by any other land birds, being furnished with an undergrowth of downy feathers. The Water Ouzels are met with in all parts of the world, but are especially numerous in northern countries; they are also occasionally seen in the Himalayas, Andes, and other tropical mountain ranges.

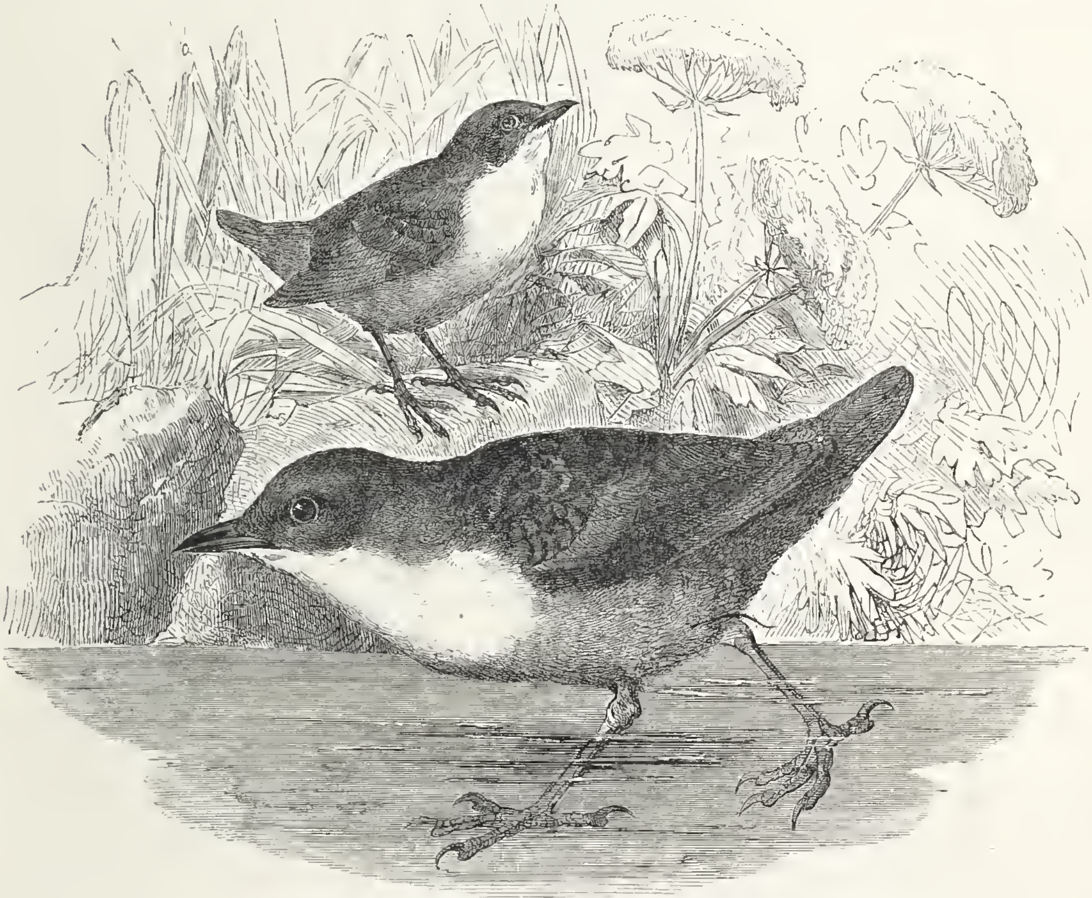
THE WATER OUZEL, OR DIPPER.

The Water Ouzel, or Dipper (*Cinclus aquaticus*), is seven and a half inches long, and eleven and one-third broad, the wing measures three and a half, and the tail two inches; the female is a few lines smaller than her mate. The coloration of the plumage is simple, but very striking, the head and nape are yellowish brown; the feathers on the rest of the upper part of the body are slate-grey, edged with black; the entire throat is milk-white; the upper breast reddish brown, and the remainder of the under side deep brown; the feathers of the young are light slate-colour, bordered with a deeper shade on the back, and on the under parts of a dirty white, with dark edges and markings. The Dippers are found very extensively throughout all such European mountain ranges—except the Scandinavian Alps, where they are replaced by a similar but darker bird—as are well supplied with water; they also frequent Central Asia, Palestine, and North-western Africa. In the south and extreme east of Asia and in America they are represented by a variety of nearly allied species. In Great Britain they are also numerous, especially in Derbyshire, upon the banks of the Dove and

Derwent. Waterfalls, rippling streams, and mountain lakes are the localities they most delight in; and in the vicinity of these they often remain throughout the entire year, always providing that during the winter the ice upon the surface of the water does not so entirely cover it as to prevent them from indulging in the constant immersions that may be said to be almost necessary to their existence. It is not uncommon to see the banks of a mountain stream, from its source to its fall, occupied by a party of these birds, each pair taking possession of about a quarter of a mile of water, and living strictly

WATER OUZELS AND KINGFISHER.

within the limits of its district. Those who have been at the pains to observe the movements and habits of this interesting species, cannot fail to have been delighted by the antics it performs while carrying on its bathing operations; not merely does it run over the stony bed of the river with the utmost agility, and wade even up to its eyes in the rippling stream, but continues its course under the water, or even beneath the ice, to a considerable depth, not, as has been stated, for a minute at a time, but certainly during the space of from fifteen to twenty seconds. Strange as this performance by so small a bird may appear to our readers, wading is the least extraordinary part of its proceedings; into the swift eddying rapid, into the bed of the roaring, rushing waterfall, it boldly plunges, steering its way, if need be, with the aid of its short wings, through the whirling masses of water, and flying, or rather, we should say, swimming, by the help of its pinions, across more tranquil spots with an ease that will bear comparison with the movements of almost any species of waterfowl. Nuttall says, in speaking of these birds, "When the water becomes deep enough for them to plunge, they open and drop their wings with an agitated motion, and, with the head stretched out as in the ordinary act of flying in the air, descend to the bottom, and there, as if on the ground, course up and down in quest of food. While under the water, to which their peculiar plumage is impermeable, they appear as though silvered over with rapidly escaping bubbles of air." A writer in the "Annals of Sporting," gives the following interesting account of a party of these birds, to whose movements he was an eye-witness:—



THE WATER OUZEL, OR DIPPER (*Cinclus aquaticus*).

"About four years ago, when on a shooting excursion, I embraced the opportunity—as everybody else who has it ought to do—of visiting the deservedly celebrated Falls of the Clyde, and here it was, while viewing the Fall of Bonnington, that, happening to cast my eye down below, a little beyond the foot of the cascade, where the river is broken with stones and fragments of rock, I espied, standing near each other on a large stone, no less than five Water Ouzels. Thus favourably stationed as I was for a view—myself unseen—I had a fair opportunity for overlooking their manœuvres. I observed accordingly that they flirted up their tails and flew from one stone to another, till at length they mustered again upon the identical one on which I had first espied them. They next entered into the water and disappeared, but they did not all do this at the same time, neither did they do it in the same manner. Three of them plunged over head instantaneously, but the remaining two walked gradually into the stream, and having displayed their wings, spread them on the surface, and by this means appeared entirely to support themselves. In this position they continued for some time—at one moment quickly spinning themselves, as it were, two or three times round, at another remaining perfectly motionless on the surface; at length they almost insensibly sank. What became of them it is not in my power to state, the water not being sufficiently transparent for me to discover the bottom of the river, particularly as I was elevated so much above it. Neither can I say that I perceived any one of them emerge again, although I kept glancing my eye in every direction, in order, if possible, to catch them in the act of re-appearing. The plumage of the bird, indeed, being so much in harmony with the surrounding masses of stone, rendered it not very easily distinguishable. I did, however, afterwards observe two of these birds on the opposite side of the stream, and possibly the three others might also have emerged and escaped my notice."

Mr. Mudie, in his "Feathered Tribes," observes—"A question has been raised how the Dipper can contrive to keep beneath a fluid so much more dense than itself. An Owl to an Owl's bulk of air is as a stone to a pound, as compared with the Dipper's bulk of water to the Dipper; but if birds rise and ascend in the air at pleasure by the motions of their wings, it is only reversing those motions to enable them to descend or keep themselves down in water. The difference of specific gravity between the bird and the water is indeed so trifling that very little effort suffices to move it in any direction, upwards, downwards, or laterally. Birds do not fly upon the principle of specific gravity, as, with equal wings, the heavy birds fly best; they fly because they strike the air more forcibly in the opposite direction to that in which they wish to go, and, under water, the Dipper just does the same. If it wishes to go down, it strikes upwards with the wings and tail; if to come up, it does just the reverse. The only difference is that the wings are held 'recovered,' as running birds use them, and that gravitation has even less to do in the matter than in flying. Any one who has ever seen a Dipper under water, or has the slightest knowledge of the mere elements of mechanics, can understand the whole matter in an instant. The Dipper is indeed often adduced as an instance of the beautiful simplicity of animal mechanics."

The flight of the Water Ouzel is effected by a series of rapidly repeated strokes, yet, even when winging its way through the air, the bird skims along near the surface of the stream, darting down from time to time to seize a passing insect. Only when hotly pursued does it quit the vicinity of its favourite lake or river, and seek safety by flying to any considerable distance, and it always returns to its usual haunts as soon as the cause of its alarm has disappeared. While perched upon an elevated point on the bank, engaged in watching for prey, it is not uncommon to see it dart suddenly down and seize its victim with an action more resembling the leap of a frog than the movement of a member of the feathered creation. As regards intelligence and the perfection of its senses, this remarkable bird is decidedly highly endowed; its sight and hearing, in particular, are extremely acute. In disposition it is cunning, cautious, and so observant that it at once perceives any unusual object or detects approaching danger.

To the presence of man the Dipper usually exhibits the utmost repugnance, whether he come in the guise of a friend or foe, nor is it less fearful of the attacks of the numerous birds of prey that dwell around and within its rocky haunts. We learn from Homeyer, who has observed these Ouzels very extensively, that their dislike to man, above alluded to, is sometimes laid aside, and that they have not only been known to allow the approach of a stranger, but have even ventured to approach mill-streams, and, in some instances, cultivated quite a close acquaintance with the miller and his family. The same writer also mentions that a pair of these birds made their appearance in Baden-Baden, and much astonished the visitors at one of the largest hotels, by commencing their diving and bathing operations immediately in front of the house. Even towards birds of its own kind, the Water Ouzel is extremely unsocial; only during the period of incubation does it tolerate the society of its mates; at other times it lives alone, driving off any of its neighbours that unwarily intrude within the precincts of its little domain with a violence well calculated to prevent a renewal of the offence, as the following extract will show :—

"A gentleman," says a correspondent of the *Field* newspaper, "was walking along the bank of a little stream in Pembrokeshire, when he saw a Dipper, shooting along with its usual arrowy flight, divert itself from its course, and, dashing against a Redbreast that was sitting quietly on a twig overhanging the stream, knock it fairly into the water. The savage little bird was not content with this assault, but continued to attack the poor Redbreast as it lay fluttering on the waves, endeavouring to force it below the surface. It twice drove its victim under water, and would have killed it, had it not been scared away by the shouts and gestures of the witness. The Robin at length succeeded in scrambling to the bank, and got away in safety." So strong is this dislike to companionship, that even the young are sent forth to provide for themselves at such a tender age as would appear to render it impossible for them to obtain their own livelihood.

The song of the male Dipper may be best described as a lively chatter, consisting of a variety of light tones uttered with different degrees of sound and expression, and is to be heard not only in the spring, but during the utmost severity of the winter. "Those," says Schinz, "who have listened to their cheerful voices on a bleak January morning, when every object in the landscape seemed frozen or dead, or watched the gay little singers as, in the very joyousness of their heart, they sprung through a hole into the ice-bound stream, to take their usual copious bath, would be inclined to believe that they are actually insensible to the chilling breath of the frost and the icy nature of the scene around them." Insects of all kinds constitute their principal means of existence. Gloger tells us that during the winter they also frequently eat mussels and small fish, and that this diet imparts a fishy flavour to their flesh. Should the season be unusually severe, they are sometimes compelled to venture forth and snatch a meal from the most unlikely places; thus we were informed by a miller in our neighbourhood that his mill was repeatedly visited during a heavy frost by a pair of these birds, they being attracted by the hope of obtaining a portion of the oil with which the mill-wheels were greased, and so overcome with hunger were the poor creatures that they swallowed the grease boldly, even when one of the men stood close to the spot.

The period of incubation commences in April, one brood and occasionally two being produced within the year. The nest is constructed close to the surface of the water, and, if possible, in such a situation as to permit the stream to flow past it, and thus afford protection against the attacks of martens, weasels, cats, and such-like enemies; it is usually placed upon projecting stones or rocks, or in holes in bridges or mill-dams, and similar situations. In an instance that came under our own notice, it was built in the wheel of a mill that had for a time stopped work. All our endeavours to obtain a sight of the nest last mentioned would have been useless, had not the friendly miller drawn off the water, and thus permitted us to satisfy our curiosity. The cavity, or nook selected for the reception of the brood is lined with a thick bed of twigs, grass, straw, and moss, these materials being overspread with a layer of leaves. If the mouth of the hole be large it is covered with a kind of mossy lid, resembling that made by the Wren for her little abode, leaving only an entrance passage of very moderate dimensions. When placed among the machinery of a mill, the nest has sometimes required to be two feet long, in order to keep it firmly fixed on its precarious foundation. The eggs, from four to six in number, are of a glossy white, variously shaped, but generally from eight to ten lines long, and eight to eight and a half lines broad. Though the female broods with such diligence and care that she will not even make her escape at the approach of danger, she rarely succeeds in hatching more than two of her brood, the rest of the eggs being no doubt addled by the damp situation of the nest. Whilst engaged in tending their young family, the parents often appear to lay aside their usual timidity, and will permit a stranger to investigate their proceedings without exhibiting any sign of fear.

THE AMERICAN WATER OUZEL.

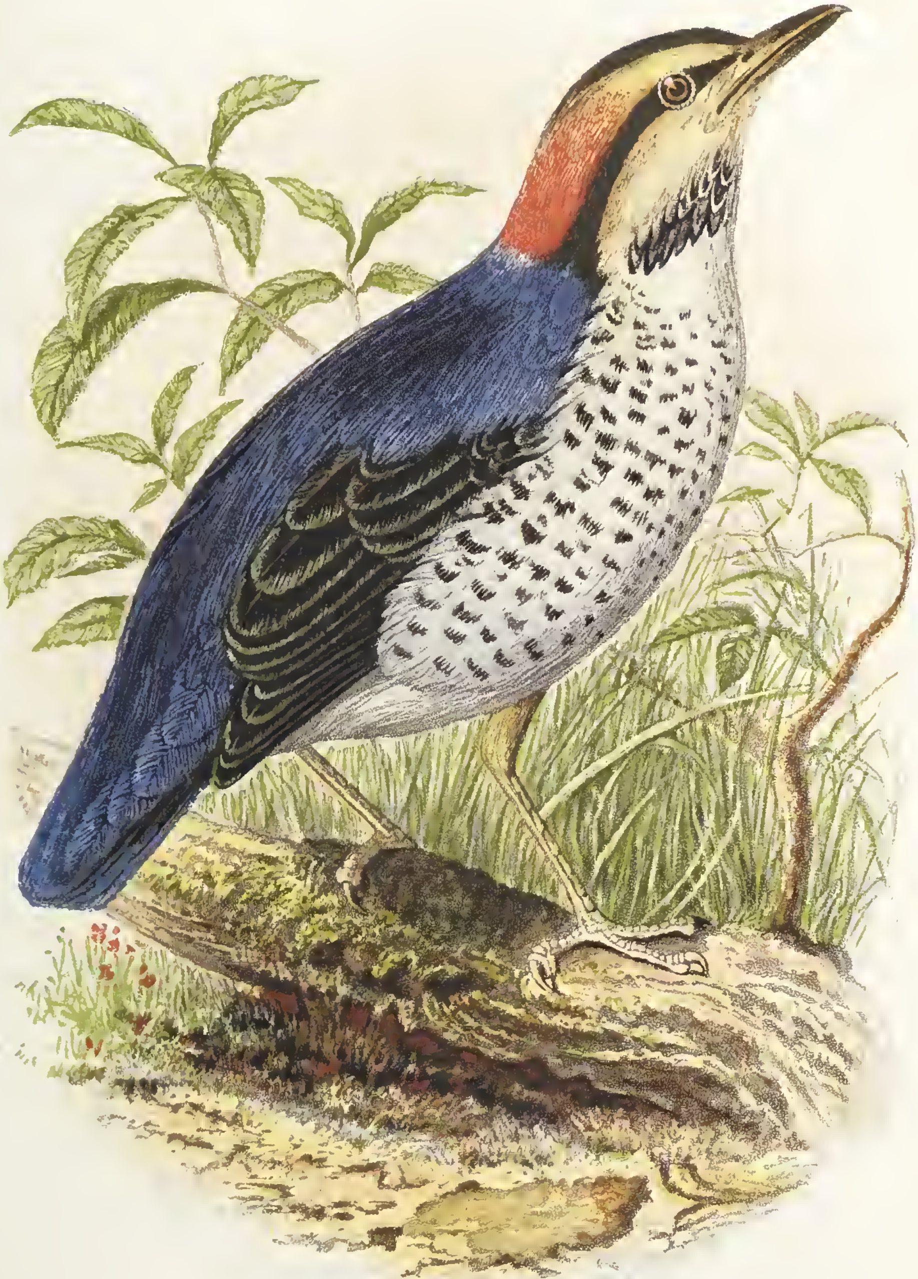
The AMERICAN WATER OUZEL (*Cinclus Americanus*) differs from the European species above described by the absence of white on the brownish chin and throat. Nuttall tells us, in his interesting work on American ornithology, that "this bird was first noticed by Pallas in the Crimea, and afterwards by Mr. Bullock in Mexico, from whence it appears, by an exclusively interior route, to penetrate into the wild and remote interior of Canada, as far as the shores of the Athabasca Lake."

Mr. Townsend says, in speaking of this bird—whose habits are but little known—"The American Dipper inhabits the clear mountain streams in the vicinity of the Columbia. When observed it was swimming along the rapids, occasionally flying for short distances over the surface of the water, and then diving into it, re-appearing after a short interval. Sometimes it alights on the banks of the stream, and jerks its tail upwards like a Wren. I did not hear it utter any note. The stomach was found to contain fragments of fresh-water snail-shells. I observed that this bird did not alight on the surface of the water, but dived immediately while on the wing."

The PITTAS, or PAINTED THRUSHES (*Pittæ*), constitute a family of birds nearly allied to the preceding, and remarkable for their short but powerful body, moderately long neck, large head, and long wings—in which the fourth and fifth quills exceed the rest in length—that reach to the tips of the very short, straight tail. All have unusually powerful beaks, compressed at the sides, and slightly arched at the culmen, those of some species in particular being so strong as to have occasioned Linnæus to class them with the Ravens. The foot is slender, the tarsus high, and the outer toes connected with that in the centre as far as the first joint. The plumage is thick and full, and usually glows with the most resplendent colours. Owing to the great variety of hue and difference in the shape of the beak and length of quills observable in the different members of this family, they have been necessarily subdivided, although they all nearly resemble each other in their habits and mode of life.

THE NURANG.

The NURANG of the Hindoos (*Pitta Bengalensis*) is blueish green upon the back, shoulders, and wing-covers; the somewhat prolonged upper tail-covers are pale blue, the chin, breast, and throat beneath the ear white; the under side is entirely brownish yellow, with the exception of a scarlet patch on the lower part of the belly and vent; a stripe that passes over the eyes is black, as well as a line over the head; a streak forming the eyebrow is white. The quills are black, tipped with white, the first six primaries being also spotted with white; the secondaries are edged with blueish green on the outer web; the tail-feathers are black, tipped with dull blue, and a brilliant



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THE AZURE PITTA — Pitta Cyanea

about [illegible] N. size

azure patch decorates the region of the shoulder. The eye is nut-brown, the beak black, and the foot reddish yellow. The length of the body is seven inches, that of the wing four, and the tail measures one inch and two-thirds. The Nurang is met with throughout the whole of India and Ceylon, and in some localities is very numerous.

THE PULIH.

The Pulih (*Pitta Angolensis*) one of the most beautiful birds of Western Africa, is more powerfully constructed, and has shorter feet than the last-mentioned species, but is similarly coloured. The plumage on the upper part of the body is green, with a slight metallic lustre; the top of the head, a broad cheek-stripe, the tail, lower wing-covers, and quills are black, the latter, from the third to the sixth, enlivened by a white spot; the tips of the tail-feathers and those upon the rump are greenish blue, the throat and a streak over the eyes reddish white; the upper breast is ochre-yellow, the lower part of the body light scarlet, the beak reddish black, and the foot flesh-pink. The length of the body is six inches and a quarter, that of the wing four, and the tail one inch and two-thirds. The Pulih inhabits a large portion of Western Africa.

THE NOISY PITTA.

The Noisy Pitta (*Pitta strepitans*) the third species we have selected for description, is of a beautiful olive-green on the back and wings; the shoulders and wing-covers are of the colour of verdigris; the throat, region of the ears, and nape, black; the under side is reddish yellow, with a black and scarlet patch on the belly and lower tail-covers, the rest of the tail and exterior quills are black, the fourth, fifth, and sixth primaries being ornamented with a white spot upon the base. The eye is brown, the beak dark brown, and the foot flesh-pink. The body is seven inches and a half long. This beautiful bird is met with on the eastern coast of Australia, between Macquarie and Moreton Bays.

The Pittas almost exclusively inhabit India and the neighbouring islands, Western Africa, and Australia, and are never met with in the Western Hemisphere. Of the thirty-three species enumerated by Wallace, six belong to Africa, two to Australia, and no less than twenty-five to the Malay Islands. Almost all frequent the inmost recesses of vast forests, whilst a few, on the contrary, occupy such rocky districts as are covered with brushwood. Jerdon is of opinion that their very inferior powers of flight place them almost at the mercy of the heavy winds that occur at certain seasons, and account for their being occasionally compelled to steer their course for localities to which they would not voluntarily resort. The first Nurang seen by him had taken shelter from a storm within the hospital at Madras.

All the various species respecting whose breeding we have any particulars, build close to the ground, and form their nests carelessly of grass, stalks, twigs, or roots, lined with hair, moss, or delicate leaves. The eggs vary considerably in appearance; those found by Bernstein were oval, and had a glossy white shell, whilst other authorities tell us that those laid by some species are bright yellow, irregularly marked with brown and deep purplish grey, while others again are greenish white, spotted with red and other dark tints. It has not yet been ascertained whether the male assists in the labour of incubation, but both parents co-operate with the utmost courage and devotion in tending and protecting their young family. Strange informs us that the Australian species may be allured to come down from the trees, even almost to the mouth of the gun, by a careful imitation of their call-note, and Hodgson speaks in similar terms of those inhabiting Nepaul. Bernstein succeeded in rearing a pair of Pittas that he had taken from the nest upon insect diet, and also rendered them extremely tame.

The ANT THRUSHES (*Myiotheræ*) constitute a family of birds principally inhabiting South America. Some of them are very similar in appearance to the Wood Thrush, whilst others resemble the Shrikes. The formation of the beak varies considerably, being sometimes much arched, sometimes awl-shaped, and of very different size and strength. The tail is of various lengths, straight or rounded at its extremity, the wing is invariably short and rounded, the tarsus is high and powerful, while the toes are long, thin, and armed with long, slender, and occasionally spur-shaped claws. The plumage of all is soft and much variegated.

The Ant Thrushes inhabit forests or wooded tracts that abound upon the vast prairies of South America, and appear entirely to avoid mountain regions. Some few species venture near the inhabited districts; but, for the most part, they resort to the densest thickets or closest copses, and are most numerous in the hottest, quietest, and moistest localities, where they generally live upon the ground, and trust, even when alarmed, more to the swiftness of their feet than to the use of their wings. Other species again, frequent the bushes, and hop from branch to branch in search of food. The strength of foot displayed by the members of this family fully equals that of any other race of birds; they leap up and down with the utmost agility, and when endeavouring to elude pursuit, spring over the ground with a rapidity that renders it difficult even for a dog to overtake them. It is only during the period of incubation that the Ant Thrushes are content to take up their abode in any one particular spot; at other seasons they wander about from place to place, without, however, undertaking any regular migrations. We are almost unacquainted with the voices of these birds, but are told that great dissimilarity is observable in their notes, and that though some species are far noisier than the rest, none are distinguished for their powers of song. Insects constitute their principal food: these are obtained from the surface of the ground, sometimes by scratching upon it after the manner of hens. According to Kittlitz, they by no means despise vegetable diet. They greedily devour ants, and thus render inestimable service to mankind, by helping to destroy some of the vast swarms of those much-dreaded insects that occasionally sweep over the face of the country. "Everywhere in the neighbourhood of Para," Mr. Bates tells us, "the Saüba Ants are seen marching to and fro in broad columns, and carrying destruction among the cultivated trees and vegetables of the Brazilians. So large are the communities made by these tiny creatures, that the traveller often comes upon heaps of their dwellings of not less than forty yards in circumference, though not more than two feet high." We learn from Ménétrier that the Ant Thrushes breed in the spring-time of their native lands, and lay from two to three white eggs, marked with red; these are usually deposited with but slight preparations in a hole in the ground, or some similar situation.

THE FIRE EYE.

The Fire Eye (*Pyriglena domicella*) is a well-known member of the family of Ant Thrushes, belonging to a group that comprises a number of the long-tailed species, who live principally amongst the branches of shrubs or in the underwood, and comparatively rarely seek their food upon the surface of the ground. They are all recognisable by their straight, conical beak, which is hooked at its tip, and slightly incised; also by their high powerful tarsi, strong toes, armed with short, slender, curved claws, moderate-sized wings, in which the fourth quill exceeds the rest in length, and moderately long and rounded tail. The plumage of the male Fire Eye is almost entirely black, as are also the beak and feet. The larger feathers of the wing-covers are edged with white, and those upon the shoulder entirely white. The eye, as the name of the bird indicates, is of a brilliant fiery red. The female is olive-brown, except upon the nape and throat, which are pale yellow. The length of this species is seven inches, its breadth nine inches; the wing measures three inches, and the tail two inches and three-quarters. The Fire Eye inhabits the forests of Brazil, and principally frequents the shrubs or brushwood in the most shady and retired spots. Its song has been described as a mere piping twitter. So eagerly does this very remarkable bird carry on its chase after ants, that Kittlitz tells us that upon one occasion he fired repeatedly into the midst of a busy party, occupied in clearing a clump of canes from a swarm of black ants, without causing them to cease from their work of destruction.

THE ANT KING.

The Ant King (*Grallaria rex*) another of these Thrushes, represents a group recognisable by their short, thick beak, which is incised towards its hooked tip, and slightly arched at the culmen; short, rounded wings, in which the fifth quill is the longest, that scarcely reach beyond the base of the mere stump-like tail; slender legs, and moderate-sized toes, armed with somewhat curved claws. The plumage is principally brown, the smaller feathers being spotted on the shaft with a lighter shade; the wing-covers have a reddish tinge; the quills and tail-feathers are blackish brown, their outer web rust-red; the bridle, cheeks, and a stripe that passes from the chin to the throat are pale yellowish white; the entire under side is light yellowish brown, the eye greyish brown, the beak blackish grey, and the feet reddish grey; the body measures eight, the wing four inches, the tail an inch and a half, and the tarsus two inches. All the interminable forests upon the coast of South America, from Brazil to Columbia, are inhabited by these birds, of whose habits, however, we are completely ignorant, as they live exclusively within the shelter of the densest brushwood, and invariably take flight at the approach of man. Burmeister tells us that their penetrating cry is to be heard from early morning till late in the evening; that they make their nest upon the ground, and lay blueish green eggs.

THE TAPACOLO.

The Tapacolo (*Pteroptochus megapodius*) represents another group of South American Ant Thrushes, in many respects resembling the Australian Lyre Birds, and particularly characterised by the very unusual development of the feet. Their body is elongate, their wing short, their tail rounded and of medium size; the beak is powerful, and compressed at the sides; the tarsus is robust, and of moderate height; the toes are slender, and armed with slightly-curved spur-like claws of great length. The Tapacolo or Tualo of Chili is of a brownish olive on the upper part of the body; the breast is reddish brown, and the rump of a reddish brown hue, striped with white; the belly whitish, with dark markings; the throat, sides of the neck, and a line over the eyes are white; the quills bordered with reddish brown, and the tail-feathers entirely brown.

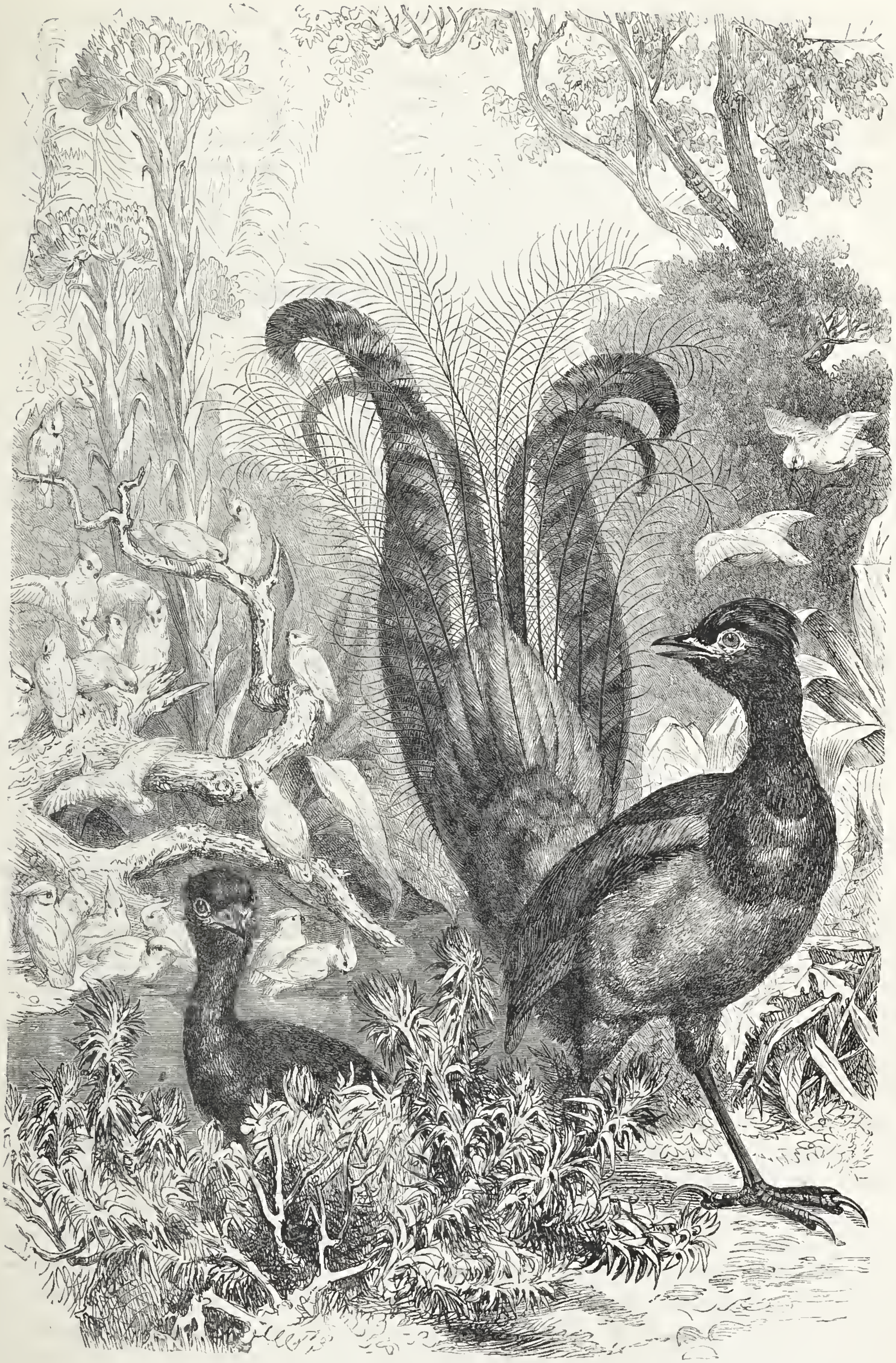
"The *Pteroptochus megapodius*," says Mr. Darwin, "called by the Chilians 'el Turco,' is as large as a Fieldfare, to which bird it has some alliance; but its legs are much longer, tail shorter, and beak stronger; its colour is a reddish brown. The Turco is not uncommon. It lives on the ground, sheltered among the thickets which are scattered over the dry and sterile hills. With its tail erect, and stilt-like legs, it may be seen every now and then popping from one bush to another with uncommon celerity. It really requires little imagination to believe the bird is ashamed of itself, and aware of its most ridiculous figure. On first seeing it one is tempted to exclaim, 'A vilely-stuffed specimen has escaped from some museum, and has come to life again.' It cannot be made to take flight without the greatest trouble, nor does it run, but only hops. The various loud cries which it utters when concealed amongst the bushes are as strange as its whole appearance. It is said to build its nest in a deep hole beneath the ground. I dissected several specimens; the gizzard, which was very muscular, contained beetles, vegetable fibre, and pebbles. From this character, and from the length of its legs, scratching feet, membraneous covering to the nostrils, and short and arched wing, this bird seems, to a certain extent, to connect the Thrushes with the gallinaceous order.

"The Tapacolo," continues the same writer, "is very crafty. When frightened by any person, it will remain motionless at the bottom of a bush, and will then, after a little while, try, with much address, to crawl away on the opposite side. It is also an active bird, and continually making a noise. These noises are very various and strangely odd; some are like the cooing of Doves, others like the bubbling of water, and many defy all similes. The country people say it changes its cry five times in the year; according to some change of season, I suppose."

THE LYRE BIRD.

The Lyre Bird (*Menura superba*) has, perhaps, excited more controversy among ornithologists, respecting its classification, than any other of the remarkable members of the feathered creation inhabiting Australia. This difference of opinion has arisen from its unusual size, and the very peculiar formation of its tail. The body is slenderly built, the neck of moderate length, the head comparatively large and well-formed, the wings short, the tail very long, and the tarsus high. The beak is straight, except at the tip, which is slightly hooked, very perceptibly incised, and broader than it is high at the base; the nostrils are large, oval, situated near the middle of the bill, and partially covered with a skin. The first five quills in the much-arched wing are graduated; the sixth, seventh, eighth, and ninth are the longest, and of nearly equal size. The very beautiful lyre-shaped tail possessed by the male is composed of sixteen feathers, whilst that of the female is of the ordinary form, and contains but twelve. The plumage of the Menura is thick, lax, and almost hair-like on the back and rump, but prolonged into a crest on the top of the head; the base of the beak is covered with bristles. The length of the body of the male is fifteen inches, that of his tail twenty-three, whilst his mate does not exceed thirteen inches; the

THE TAPACOLO (*Pteroptochus megapodius*).



THE LYRE BIRD (*Menura superba*).

longest feathers in her tail measuring not more than fifteen inches. The male Menura is of a deep brownish grey on the upper part of the body, shaded with red on the rump; the throat and upper part of the breast are red; the rest of the under side greyish brown, lightest upon the belly. The secondary quills and outer web of the primaries are reddish brown; the tail blackish brown on the upper side, and silvery grey beneath. The outer webs of the two lyre-shaped feathers are dark grey, their extremities velvety black, fringed with white, the inner web striped alternately with blackish brown and rust-red; the two centre tail-feathers are grey, the rest black. The plumage of the female is entirely of a dirty brown, shading into grey on the belly; the young resemble the mother until after the first moulting season. This remarkable bird, which, together with the Emeu and Kangaroo, form the emblems or heraldic bearings of Australia, has been most carefully observed and described by both Gould and Bennett; we shall, therefore, lay before our readers the interesting results of their labours in the words of those naturalists :—

"The great stronghold of the Lyre Birds," says Mr. Gould, "is the colony of New South Wales, and, from what I could learn, its range does not extend so far to the eastward as Moreton Bay; neither have I been able to trace it to the westward of Port Phillip on the southern coast; but further research only can determine these points. It inhabits equally the bushes on the coast and those that clothe the sides of the mountains in the interior. On the coast it is especially abundant at the Western Port and Illawarra; in the interior the cedar bushes of the Liverpool range, and, according to Mr. G. Bennett, the mountains of the Tamat country are among the places of which it is a denizen. Of all the birds I have ever met with, the Menura is by far the most shy and difficult to procure. While among the mountains I have been surrounded by these birds, pouring forth their loud and liquid calls for days together, without being able to get a sight of them; and it was only by the most determined perseverance and extreme caution that I was enabled to effect this desirable object, which was rendered more difficult by their often frequenting the almost inaccessible and precipitous sides of gullies and ravines, covered with tangled masses of creepers and umbrageous trees. The cracking of a stick, the rolling down of a small stone, or any other noise, however slight, is sufficient to alarm it; and none but those who have traversed these rugged, hot, and suffocating bushes can fully understand the anxious labour attendant on the pursuit of the Menura. Independently of climbing over rocks and fallen trunks of trees, the sportsman has to creep and crawl beneath and among the branches with the utmost caution, taking care only to advance while the bird's attention is occupied in singing, or in scratching up the leaves in search of food: to watch its action it is necessary to remain perfectly motionless, not venturing to move, even in the slightest degree, or it vanishes from sight as if by magic. Although I have said so much on the cautiousness of the Menura, it is not always so alert: in some of the most accessible bushes through which roads have been cut it may frequently be seen, and even closely approached on horseback, the bird evincing less fear of horses than of man. At Illawarra it is sometimes successfully pursued by dogs, trained to rush suddenly upon it, when it immediately leaps upon the branch of a tree, and its attention being exclusively attracted by the dog below barking, it is easily approached and shot. Another successful mode of procedure is by wearing the tail of a full-plumaged male in the hat, keeping it constantly in motion, and concealing the person among the bushes, when, the attention of the bird being arrested by the apparent intrusion of another of its own sex, it will be attracted within the range of the gun. If the bird be hidden from view by surrounding objects, any unusual sound, such as a shrill whistle, will generally induce him to show himself for an instant, by causing him to leap with a gay and sprightly air upon some neighbouring branch, to ascertain the cause of the disturbance; advantage must be taken of this circumstance immediately, or the next moment it may be half-way down the gully. The Menura seldom, if ever, attempts to escape by flight, but easily eludes pursuit by its extraordinary powers of running. None are so efficient in obtaining specimens as the naked black, whose noiseless and gliding steps enable him to steal upon it unheard or unperceived; with a gun in his hand he rarely allows it to escape, and in many instances he will even kill it with his own clumsy weapons. The Lyre Bird is of a wandering disposition, and, although it probably keeps to the same jungle, it is constantly engaged in traversing it from one end to the other, from the mountain base to the top of the gullies, whose steep and rugged sides present no obstacle to its long legs and powerful muscular thighs. It is also capable of performing extraordinary leaps, and I have heard it stated that it will spring ten feet perpendicularly from the ground. Among its many curious habits, the only one at all approaching to those of the Gallinaceæ is that of forming small round hillocks, which are constantly visited during the day, and upon which the male is continually tramping, at the same time erecting and spreading out its tail in the most graceful manner, and uttering its various cries; sometimes pouring forth its natural notes; at others imitating those of other birds, and even the howling of the native dog (dingo). The early morning and evening are the periods when it is most animated and active. Although upon one occasion I forced this bird to take wing, it was merely for the purpose of descending a gully, and I am led to believe that it seldom exerts this power unless under similar circumstances. It is particularly partial to traversing the trunks of fallen trees, and frequently attains a considerable altitude by leaping from branch to branch. Independently of a loud full note, which may be heard reverberating over the gullies for at least a quarter of a mile, it has also an inward warbling song, the lower notes of which can only be heard within about fifteen yards. It remains stationary whilst singing, fully occupied in pouring forth its animated strain; this it frequently discontinues abruptly, and again commences with a low, inward snapping noise, ending with an imitation of the loud and full note of the Satin Bird, and always accompanied by a tremulous motion of the tail. The food of the Menura appears to consist principally of insects, particularly of centipedes and coleoptera. I also found the remains of shelled snails in the gizzard, which is very strong and muscular."

"I first," continues Mr. Gould, "saw these birds in the mountain range of the Tumat country. Lately they have been very abundant among the Blue Mountain ranges bordering on the Nepean River, above Emeu Plains, about thirty-five miles from Sydney. They are remarkably shy, very difficult of approach, frequenting the most inaccessible rocks and gullies; and, on the slightest disturbance, they dart off with surprising swiftness through the brakes, carrying their tail horizontally; but this appears to be for facilitating their passage through the bushes; for when they leap or spring from branch to branch, as they ascend or descend a tree, their tail approaches to the perpendicular. On watching them from an elevated position playing in a gully below, they are seen to form little hillocks or mounds by scratching up the ground around them, trampling and running flightily about, uttering their loud, shrill call, and imitating the notes of various birds."

The following account of a young Lyre Bird was received by Mr. Gould from Ludwig Becker:—

"In the month of October, 1858, the nest of a Lyre Bird was found in the densely-wooded ranges near the sources of the river Yarra-Yarra. It contained a bird which seemed at first to be an old one in a sickly condition, as it did not attempt to escape, but it was soon discovered to be a young bird of very large size as compared with its helplessness. When taken out of the nest it screamed loudly, the note being high, and sounding like 'tching-tching.' In a short time the mother-bird, attracted by the call, arrived, and, notwithstanding the proverbial shyness of the species, flew within a few feet of her young, and tried in vain to deliver it from captivity, by flapping her wings and making various rapid motions in different directions towards the captor. A shot brought down the poor bird, and, with its mother near it, the young Menura was silent and quiet. It was taken away, and kept at a 'mia-mia' erected in the midst of the surrounding forest.

"Its height was sixteen inches; its body covered with a brown down, but the wings and tail were already furnished with feathers of a dark-brown colour. The head was thickly covered with a greyish-white down, of from one to two inches in length; the eyes were hazel brown; the beak blackish and soft; the legs nearly as large as those of a full-grown specimen, but it walked most awkwardly, with the legs bent inwards. It rose with difficulty, the wings assisting, and, when on its legs, occasionally ran for a short distance, but often fell, apparently from want of strength to move the large and heavy bones of its legs properly. It constantly endeavoured to approach the camp-fire, and it was a matter of some difficulty to keep it from a dangerous proximity to it. Its cry of 'tching-tching' was often uttered during the daytime, as if re-calling the parent bird; and when this call was answered by its keeper feigning the note 'bullen-bullen'—the native name for the Lyre Bird, which is an imitation of the old birds' cry—it followed the voice at once, and was easily led away by it. It soon became very tame, and was exceedingly voracious, refusing no kind of food, but standing ready, with widely-gaping bill, awaiting the approaching hand which held the food, consisting principally of worms and the larvæ of ants, commonly called ants' eggs, but it did not refuse bits of meat, bread, &c. Occasionally it picked up ants' eggs from the ground, but was never able to swallow them, the muscles of the neck not having acquired sufficient power to effect the required jerk and throwing back of the head. It rarely if ever partook of water. It reposed in a nest made of moss, and lined with opossum-skin, where it appeared to be quite content. While asleep the head was covered with one of the wings. When called 'bullen-bullen' it awoke, looked for several seconds at the disturber, soon put its head under the wing again, and took no notice whatever of other sounds or voices. That the young Menura remains for a long time in the nest is proved by the manner in which it disposes of its droppings; our young captive always went backward before dropping its dung, in order to avoid soiling the nest. It is probable that it leaves the nest in the daytime, when the warmth of the weather invites it to do so, but that during the night it remains in the nest; and if the weather should become cold the mother shelters her young, the nest being large enough to contain both."

A second species of Lyre Bird, the *Menura Alberti*, is thus described by Mr. Gould :—

"The habits of this bird are very similar to those of the *Menura superba*, but having seen and watched both on their playgrounds, I find the *Menura Alberti* is far superior in its powers of mocking and imitating the cries and songs of others of the feathered race to the *Menura superba.* Its own peculiar cry or song is also different, being of a much louder and fuller tone. I once listened to one of these birds that had taken up its quarters within two hundred yards of a sawyer's hut, and he had made himself perfect with all the noises of the homestead—the crowing of the cocks, the cackling of the hens, the barking and howling of the dogs, and even the painful screeching of the sharpening or filing of the saw. I have never seen more than a pair together. Each bird appears to have its own walk or boundary, and never to infringe on the other's ground, for I have heard them day after day in the same place, and seldom nearer than a quarter of a mile to each other. Whilst singing they spread their tails over their heads like a Peacock, droop their wings to the ground, and at the same time scratch and peck up the earth. They sing mornings and evenings, and more in winter than at any other time. The young cocks do not sing until they get their full tails, which I fancy is not until the fourth year, having shed them in four different stages. The two centre curved feathers are the last to make their appearance. They live upon small insects, principally beetles; their flesh is not eatable, being dark, dry, and tough, and quite unlike that of other birds. They commence building their nests in May, lay in June, and have young in July. They generally place their nests on the side of some steep rock, where there is sufficient room to form a lodgment, so that no animals or vermin can approach."

The following particulars respecting this species we extract from one of Dr. Bennett's interesting works on Australia:—" The locality it frequents, says Dr. Stephenson, 'consists of mountain ridges not very densely covered with brush. It passes most of its time on the ground, feeding and strutting about, with the tail reflected over the back to within an inch or two of the head, and with the wings drooping on the ground. Each bird forms for itself three or four "corroborring places," as the sawyers call them. These consist of holes scratched in the sandy ground, about two feet and a half in diameter, by sixteen, eighteen, or twenty inches in depth, and about three or four hundred yards apart, or even more. Whenever you get a sight of the bird, which can only be done with the greatest caution, and by taking advantage of intervening objects to shelter yourself from its observation, you will find it in one or other of these holes, into which it frequently jumps, and seems to be feeding; it then ascends again, and struts round and round the place, imitating with its powerful musical voice any bird it may chance to hear around it. The note of the *Dacelo gigantea*, or Laughing Jackass, it imitates to perfection. Its own whistle is exceedingly beautiful and varied. No sooner does it perceive an intruder than it flies up into the nearest tree, first alighting on the lowermost branches, and then ascending by a succession of jumps, until it reaches the top, whence it instantly darts off to another of its playgrounds. The stomachs of those I dissected,' continues Dr. Stephenson, 'invariably contained insects, with scarcely a trace of any other material. Now collectors of insects know that gravel-pits and sandy holes afford them great treats, and it appears to me that one, if not the principal use of the excavations made by this bird is to act as a trap for unwary coleopterous and other insects, which falling in cannot ascend again, and are therefore easily secured.' Mr. Strange, who met with this species in the cedar bushes which skirt Turanga Creek, Richmond River, says, 'Like the *Menura superba*, it is of a shy disposition. When alarmed or running away, it carries the tail erect, and not drooping downward like that species. I spent ten days in the midst of cedar-brushes in the hope of seeing something of its nidification, but did not succeed in finding any nest with eggs. I found, however, one large, dome-shaped nest, made of sticks placed in the spur of a large fig-tree, which the natives assured me was that of the Colevin, their name for this bird. It resembles that of Orthonyx, except that the inside was not lined with moss, but with litter from a large mass of parasitical plants that had fallen to the ground. The natives agree in asserting that the eggs are only laid in cold weather, by which I apprehend they mean the spring, as I shot a young specimen about four months old on the 24th of November which had the whole of the body still covered with brown and greyish down. I have seen this specimen take extraordinary leaps of not less than ten feet from the ground, on to some convenient branch, whence it continues to ascend in successive jumps, until it has attained a sufficient elevation to enable it to take flight into the gully below.'"

The WARBLERS (*Sylviadæ*) are among the smallest and most fascinating of the feathered race. They are recognisable by their short, awl-shaped beaks, powerful feet, short, rounded wings, long, variously formed tails, and usually silky plumage.

The SONG WARBLERS (*Sylviæ*), the most attractive group of this family, are all little birds, having soft, silky, variously-coloured plumage and a slender body; the beak is slightly conical, strong at the base, almost as broad as it is high, hooked and slightly incised at its tip; the foot is powerful and of medium length, the toes short and strong. The wings are rounded and of moderate size, the third and fourth quills being longer than the rest; the tail, which is composed of twelve feathers, varies in its formation. Light grey predominates in the coloration of the plumage; but is varied with different shades of red and brown; the adult male and female are generally but not invariably alike.

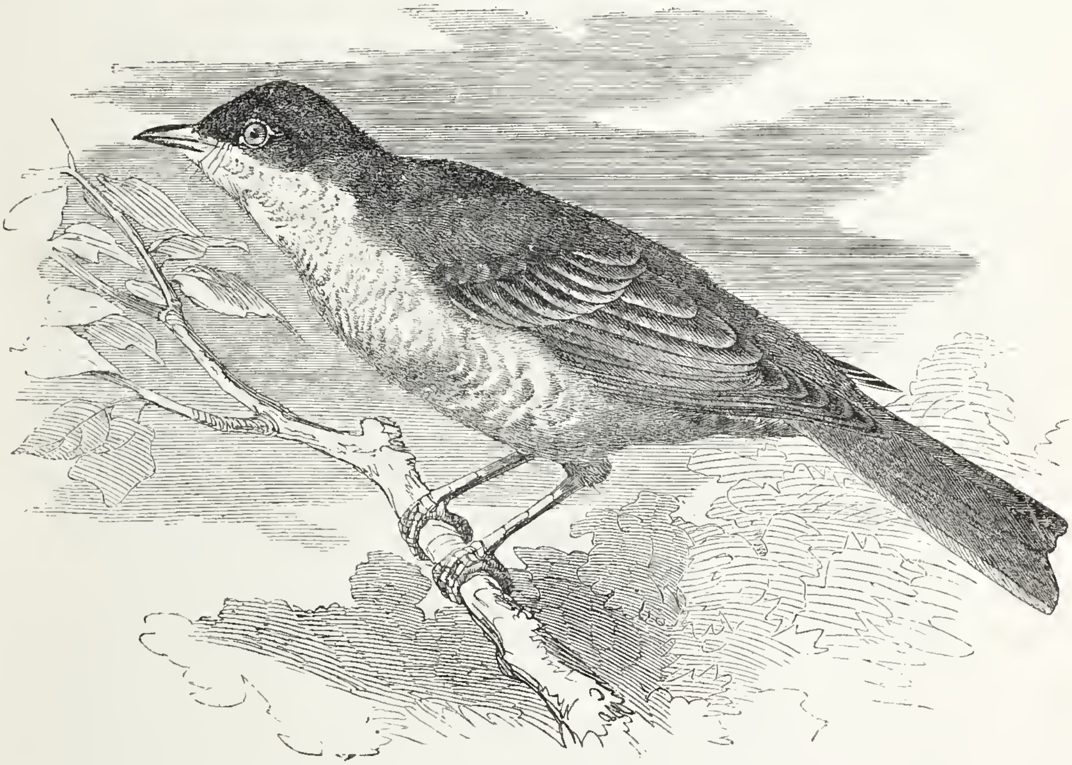
The Song Warblers principally frequent the woodland districts of the more northerly portions of the Eastern Hemisphere, and usually prefer tracts covered with low trees and underwood to lofty forests. They almost entirely avoid mountainous regions, even should these be thickly overgrown with their favourite shrubs and bushes. Unlike the Thrushes, they rarely descend to seek for food upon the surface of the ground, nor are they apparently more at their ease when on the wing, for they frequently undertake lengthy journeys during their winter migrations, and their flight is in most instances fluttering and heavy; some few species, however, prove exceptions to this rule, as they are not only capable of careering with a rapid undulating course through the realms of air, but frequently, when about to pour forth their song, soar to a considerable altitude. It is in the depths of the thicket, however, that the members of this family best display the wonderful agility with which they have been endowed. No tangled brake, no mass of foliage, however dense, is impervious to these little birds. With lowered head, and wings and feet drawn in, they creep through the smallest apertures with astonishing dexterity, and make their way with an ease and rapidity that is almost unequalled in the whole feathered creation. Unlike the Thrush or Shrike, they never agitate their tail and pinions when in motion; but, if angry or excited, display the crest that decks their head, and slightly raise their wings above the back. As regards their vocal powers, they are, for the most part, highly gifted. Their senses are keen, their intelligence remarkable, and their dispositions shy and cautious. Although usually peaceable during the breeding season, they frequently exhibit considerable fury and violence towards any suspected rival or enemy, that contrasts strangely with the tenderness and devotion they display while endeavouring to win the attention of their mates, or ministering to the wants of their little family. More than one brood is usually produced in the year, each of which consists of from four to six eggs, of a white hue, spotted with grey or brown. The flat and prettily-formed nest is placed amongst the bushes, or on a branch, and constructed of stalks, cottony wool, spiders' webs, green moss, and fibres, lined with horsehair, the whole being woven together so lightly that the eye can penetrate its interior. In some instances these fragile little structures are fastened so insecurely on their foundations as to be liable to be dislodged by the wind. During the summer months the Song Warblers subsist almost entirely upon insects, larvæ, caterpillars, and similar fare, and in autumn devour large quantities of berries and fruit. They are often very destructive to cherry-trees, and in Southern Europe do great damage to the crops of ripe figs.

The TRUE SONG WARBLERS (*Curruca*) are distinguished from their congeners by the comparative length of their pointed wings, in which the third quill is longer than the rest, also by their moderately-sized and almost or quite straight tail.

THE SPARROW-HAWK WARBLER.

The SPARROW-HAWK WARBLER (*Curruca nisoria*), the largest European member of this group, is seven inches long and eleven broad; the wing measures three and a half, and the tail three inches. Upon the upper part of the body the feathers are deep grey, usually shaded with rust-red; the under side is greyish white, decorated with dark grey crescent-shaped spots, which are most clearly defined in the plumage of the male bird; the quills are brownish grey, edged with a paler shade; the tail-feathers deep grey, with light borders. The eye is bright gold colour, the beak brownish black, and yellowish pink at its base; the foot is light grey. In the young, the crescent-shaped spots on the breast are but slightly indicated.

This species is numerously met with in most European countries that lie between Southern Sweden and Central Asia; it is, however, unknown in England, and is extremely rare both in Spain and Greece. Pasture lands, abounding in shrubs and bushes, on the banks of large rivers, are the localities it almost exclusively frequents; it never occupies lofty trees, except as temporary resting-places during its winter migrations. In its general habits and movements the Sparrow-hawk Warbler closely resembles most other members of its family; it flies with difficulty, and comes but seldom to the ground, but displays the utmost agility in creeping through the densest bushes, or in hopping from branch to branch. Its song is rich, varied, and uttered constantly, almost throughout the entire day. The period of incubation commences as soon as the birds have returned to their usual spring haunts, and is accompanied by repeated outbursts of jealousy and violence on the part of the male, who not only frequently engages in fierce conflicts with his actual rivals, but flies assiduously round his mate while she carries on the work of building their little dwelling, in order to keep the coast clear from even a distant intruder on her privacy. The nest is usually placed in a hedge or bush, at from two to four feet above the ground, and is in every respect similar to that above described; the eggs, from four to six in number, are oval, with thin greyish shells, spotted with grey or olive brown. Both parents exhibit great timidity whilst occupied in the care of their young, and quit the nest at the first alarm of danger, the female frequently endeavouring to divert attention from her brood by feigning to be lame or suffering. If disturbed while occupied in building, it is not uncommon for a pair to leave the spot and re-commence their preparations elsewhere; indeed, in some instances, an unusually timid couple have been known to desert their brood when terrified by the approach and investigations of a stranger.



THE SPARROW-HAWK WARBLER (*Curruca nisoria*).

THE ORPHEUS WARBLER.

The ORPHEUS WARBLER (*Curruca Orphea*), the European species next in size to that above described, is six inches and a half long, and nine and a quarter broad; the wing measures three inches, and the tail two inches and three-quarters. The female is two lines smaller than her mate. The entire upper part of the back is dark grey, shaded with brown, the top of the head and nape are brown or greyish black, the sides of the breast light rust-red, the rest of the under-side is white; the quills and tail-feathers are blackish brown, the outer web of the exterior tail-feathers white, as is also a conical spot on the extremity of the inner web and on the tip of the feathers next in order. The eye is light yellow, the upper mandible quite black, and the bare circle around the eyes bluish grey. The female is paler than her mate, particularly about the region of the head. This species inhabits the south of Europe, and only occasionally wanders to the central portions of other continents. Some writers are of opinion that it remains in Greece throughout the entire year, but this statement we are satisfied, from our own observation, is incorrect; there, as in other southern countries of Europe, they generally appear about April, and migrate to Central Africa and India at the beginning of autumn. Jerdon tells us that they are numerously met with in Southern India during the winter, and we have ourselves seen them at that season in Africa, near the Blue River. Unlike the generality of Warblers, these birds usually frequent trees rather than underwood or bushes, and especially delight in groves of figs and olives, or pine forests. Throughout all the well-watered and highly-cultivated districts of their native lands they are by no means rare, but are seldom seen in the vicinity of mountains. Their voice is loud, sonorous, and agreeable. The nest of this species is usually placed in full view, upon the bough of a tree, and is somewhat thicker and more substantially constructed than that of most other Warblers; the interior is variously lined, occasionally with delicate fibrils of grape-vines or similar materials. Thienenmann mentions an instance in which fish-scales were, strangely enough, employed for this purpose. The brood consists of five glossy eggs, of a delicate white or greenish-white colour, spotted with violet grey or yellowish brown; the latter spots are sometimes entirely wanting. The female alone broods, while her mate sits upon a neighbouring tree or branch, and cheers her labours with a constant flow of song. The young are tended by both parents for some time after they are fully fledged, and go forth alone into the world immediately after the first moulting season.

The following notice of the occurrence of this species in Yorkshire may be found in the "Zoologist" for 1849, from the pen of Sir William Milner, of Nunappleton:—"The species was a female, and was observed in company with its mate for a considerable time before it was shot. The other bird had a black head, and the description I received left no doubt on my mind that it was a male *Sylvia Orphea*. The bird obtained, of which I send you a description, was shot in a small plantation near the town of Wetherby, on the 6th of July, 1848, and had the appearance of having been engaged in incubation, from the state of the plumage." "Mr. Graham, a bird preserver of York," continues Sir W. Milner, "hearing that a very uncommon bird had been shot, went over to Wetherby, and fortunately obtained the specimen for my collection. This bird had the beak black and very strong; the whole upper part of the plumage dark ash-coloured brown; the outer feather of the tail white; the second on each side edged with dirty white, the rest of a brownish black; chin dirty white; throat and belly brownish white; under surface of the wings and vent light brown; legs very strong, toes and claws black. The whole length six inches three lines."

THE GREATER PETTICHAPS.

The Greater Petticheps, or Garden Warbler (*Curruca* or *Sylvia hortensis*), is six inches long, and nine and three-quarters broad; the wing measures three inches, and the tail two and a half; the female is somewhat smaller than her mate, but resembles him in colour. The entire upper portion of the body is olive-grey, the throat and belly are of a whitish shade, and the rest of the under side light grey. The quills and tail are dark grey, the eye light greyish brown, the beak and feet dull grey.

This species inhabits the whole of Southern Europe, extending in a northerly direction as far as

68° north latitude; in France and Italy it is especially numerous, but is comparatively rarely met with in Spain, though it is known to breed in that country. It usually arrives in England and Scotland about April, and leaves early in September. Unlike most of its congeners, the Garden Warbler is extremely quiet and peaceful in its demeanour, and, though cautious and vigilant, by no means timid. It usually frequents woods, gardens, and orchards, and may constantly be seen disporting itself among the fruit trees, in utter indifference to the presence of the owners.

Macgillivray, quoting from Sweet, says:—"It visits us in the spring, about the end of April or the beginning of May, and its arrival is soon made known by its very loud and long song. It generally begins very low, not unlike the song of the Swallow, but raises it by degrees, until it resembles the song of the Blackbird, singing nearly all through the day and the greater part of the time it stays with us, which is but short, as it leaves us again in August. In confinement it will sing nearly all through the year, if it be treated well. In a wild state it is generally found in gardens and plantations, where it feeds chiefly upon fruits, and will not refuse some kinds of insects; it is very fond of the larva or caterpillar that is often found upon cabbage plants, the produce of *Papilio brassicæ*, and I know no other bird of the genus that will feed on it. Soon after its arrival here the strawberries are ripe, and it is not long before it finds them out; the cherries it will begin before they are quite ripe, and I know not any kind of fruit or berry which is wholesome that it will refuse. It generally tastes the plums, pears, and early apples, before it leaves us; and, when in confinement, it also feeds freely on elder, privet, or ivy berries; it is also partial to barberries."

THE ORPHEUS WARBLER (*Curruca Orphea*).

Mr. Neville Wood has seen it "darting into the air to catch insects in the same manner as the Spotted Flycatcher (*Muscicapa grisola*), often taking its stand on a dahlia stake, watching for its prey, darting aloft with inconceivable rapidity, with its bill upwards, catching the fly with a loud snap of the bill, and immediately returning to its station to renew the same process with similar success."

In an extract given by Mr. Thompson, of Belfast, from the MS. of the late John Templeton, Esq., he says:—"On the 21st of May I had the pleasure of seeing this bird, to whose haunt in my garden I was attracted by its pleasing melody. It was not very shy, coming near enough to be distinctly seen, but was extremely restless, flitting every moment from place to place, and only stationary on the branch while it gave out its song. The male continued to sing until the young were reared, when his song ceased for about a fortnight; then it was again renewed, on the construction, I suppose, of a new nest."

"As a songster," says Yarrell, "it ranks with the Blackcap; and a good judge of the comparative value of the songs of our birds has described that of the Garden Warbler as a continued strain of considerable modulation, sometimes lasting for half an hour at a time without a pause. The song is wild, rapid, and irregular in time and tone, but the rich depth is wonderful for so small a throat, approaching in deep mellowness even to that of the Blackbird."

The nest is made in bushes and trees, at various distances from the ground, and is so slightly constructed as to render it a matter of wonder how it can possibly support the five or six eggs that constitute a brood. It is formed externally of strong bents, lined with finer bents, fibrous roots, and horsehair. The situation in which it is placed is carelessly selected, and it is no uncommon occurrence for the little structure to fall to the ground, not only during a high wind, but from the mere weight of the parents as they enter or leave the nest. Strangely enough, though they thus appear to adopt the most unsuitable situations for building, few birds are so capricious as to their requirements in this respect, and it frequently happens that a pair of Garden Warblers will lay the foundation of several nests, often within a very limited space, before they satisfy their peculiar fancies. Both parents co-operate in the business of incubation; the male, however, only sits during the middle of the day; the nestlings are hatched within a fortnight, and in another fortnight can leave the nest, and climb nimbly about the surrounding branches, though unable to fly. If undisturbed, this species breeds but once in the year.

THE LESSER WHITETHROAT.

The LESSER WHITETHROAT (*Curruca garrula*) does not exceed five inches and one-third in length, and eight in breadth; the wing measures two inches and a half, and the tail two inches and a quarter. In this species the top of the head is grey, and the back brownish grey; the wing-feathers are of a still deeper grey, edged with a pale shade; the entire under side is white, tinted with yellowish red on the sides of the breast; the cheek-stripes are dark grey; the exterior tail-feathers white; the rest being only surrounded with a white border. The eyes are brown, the beak dark grey, and the legs bluish grey.

This Whitethroat inhabits the whole of Central Europe, usually appearing in England about April; and, according to Jerdon, is met with throughout India and in many parts of Central Asia, during the course of its winter migrations. Woods, gardens, and orchards are its favourite resorts, and these it boldly visits, not merely in the neighbourhood of human habitations, but in the very centre of towns and villages.

"The food of this species," as Mr. Yarrell informs us, "is very similar to that sought for by the Common Whitethroat—namely, insects in their various states, the smaller fruits of many different sorts, for which it visits the gardens, and, later in the season, it feeds on the berries of the elder and some others. It is not, however, so easy to preserve this bird in health during confinement as the Common Whitethroat."

Colonel Sykes obtained examples in the Deccan which only differed from the English specimens in having a reddish tint on the white of the under surface, but Mr. Blyth mentions that he has seen this tint on specimens obtained in this country, and Mr. Yarrell quotes part of a letter received from the Rev. W. F. Cornish, of Totnes, which says, "I have reared the Lesser Whitethroat, two males and a female; the males had a beautiful tinge of carmine on the breast."

Mr. Hepburn, who was the first to discover this species in East Lothian, has furnished the following notice respecting it:—"On the 7th of May, 1838, I first heard the song of the Lesser Whitethroat (*Sylvia curruca*). In its habits it is shy and retiring; it loves to frequent copses and gardens. When you approach its haunts it conceals itself in the thickest shade, where it utters its alarm-note, distending its throat a little. One day in July, when lying in wait for Wood Pigeons in a ditch beneath the shade of some hedge-row trees, I observed one sporting amongst the hawthorn twigs. He once sprung into the air, caught an insect, and then began to sing in a very low voice, ending in a very shrill, tremulous cry. House Sparrows, Hedge Chanters, Chaffinches, Wagtails, Willow Wrens, Wood Wrens, White Throats, dart into the air in the very same way. The little fellow ceased his song when he observed me, and sought the middle of the hedge, where he remained till I left my place. I teased him thus for about twenty minutes. He had young ones at the time. It was about the beginning of July that I observed that both the Greater and Lesser Whitethroats made excursions into fields of growing wheat and beans. In the former case they settle on the stalk near to the ear, which they diligently examine. The Wheat Fly (*Cecidomyia tritici*) at this season deposits its eggs between the glumes of the corn, and we may reasonably suppose that the Whitethroats devour this destructive insect, in doing which they must confer a great benefit on the farmer, as far as their influence extends. After this I shall never grudge them a few currants. But this is not all; for, besides destroying vast numbers of other insects which feed on the honey contained in the nectary of the bean, I have seen their little mouths filled with the black or collier aphides, which often commit much damage by adhering to the top of the field bean and sucking its juice, so that sometimes fruit, leaves, and stem perish. It prefers the red currant to all other fruits. It departs about the 8th or 10th of September."

"The louder notes of this bird," says Mr. Yarrell, "have nothing particular in their tone to recommend them; but if approached with sufficient caution to prevent alarm, or when kept in confinement, they may be heard to utter a low, soft, and pleasing whistle, which is almost incessant; so much so as to have induced the application of the epithets of *garrula* and *babillard*, as terms of specific distinction. The nest is usually placed upon a thick bush near the ground, and resembles that made by other members of the family. The eggs are from four to six in number, round, and pure white or bluish green, marked with violet-grey or yellowish-brown spots, most thickly strewn over the broad end. Both parents assist in the process of incubation, and tend and protect their young with the utmost care and assiduity; but, like the species already described, will often, if disturbed when brooding, desert not merely their nest, but the eggs contained therein. We have frequently remarked that the same self-sacrificing devotion exhibited by this species to its own nestlings is also displayed towards the young Cuckoos that are sometimes reared involuntarily as inmates of the little family."

THE CAPIROTE, OR BLACK-CAP.

The Capirote, or Black-cap (*Curruca atricapilla*), one of the most highly-endowed of woodland songsters, is greyish black upon the upper parts of the body; the under side is light grey, with the throat of a still paler shade. In the adult male the crown of the head is deep black, in the females and young reddish brown; the eyes are brown, the beak black, and the feet dark grey. This species is five inches and ten lines long, and eight inches broad; the wing measures two inches and a half and the tail two and a quarter; the size of the female is the same as that of her mate. It is at present uncertain whether the REDHEAD (*Curruca ruficapilla*) is to be regarded as merely a variety of this bird, or as an entirely different species.

The Capirote is found throughout the whole of Central Europe, and during its migration visits the southern portion of that continent; it is also very numerously met with in the Canary Islands, and has occasionally been seen in Soudan. In most parts of Europe it generally makes its appearance about April, and leaves again early in the autumn.

"When the Blackcap first arrives in this country, its chief food," says Mr. Sweet, "consists of the early ripened berries of the ivy, and where these are there the blackcaps are first to be heard, singing their melodious and varied song. By the time the ivy-berries are over, the little green larvæ of the small moths, rolled up in the young shoots and leaves, will be getting plentiful; these then constitute their chief food until strawberries and cherries become ripe; after that there is no fruit or berry that is eatable or wholesome that they will refuse. When they have cleared away the elder-berries in autumn, they immediately leave us."

This species usually produces two broods in the season, and places its comparatively well-built nest within the shelter of a thorny bush or leafy shrub. The eggs, from four to six in number, are of an oval shape, smooth, flesh-coloured, and marked with reddish-brown spots.

"The male birds of several species of Warblers," says Mr. Yarrell, "share with their females the task of incubating the eggs; this is particularly the case with the male Blackcap, readily known from the female by his black head. So gratified is he, apparently, when performing this part of his duty, that he will frequently sing while thus occupied, sometimes, perhaps, occasioning the destruction of his hopes. A writer in the 'Magazine of Natural History' says he has several times been led to the discovery of the eggs by the male singing while sitting. The female, when taking her turn on the nest, is occasionally fed by her mate. Generally, however, male birds neither sit so steady, or feed the young so assiduously, as the females."

Bolle tells us that if the nestlings lose their mother her bereaved mate will alone undertake the care of his hungry young ones. The general habits and demeanour of the Blackcap so closely resemble those of other members of this family that further description is unnecessary. Nevertheless, we must allude more particularly to the peculiarities of its beautiful song, which has been described by Mr. Yarrell :—

"The Blackcap has in common a full, deep, sweet, loud, and wild pipe, yet that strain is of short continuance, and his motions are desultory; but when the bird sits calmly, and engaged in song in earnest, he pours forth a very sweet but inward melody, and expresses a great variety of soft and gentle modulations, superior, perhaps, to any of our Warblers, the Nightingale excepted. While this species warbles the throat is wonderfully distended."

Bolle mentions a tame Capirote kept by a lady in Ciudad de los Palmas, the chief town of the Canaries, that was the wonder and admiration of the whole neighbourhood, on account of the extraordinary clearness with which it had learnt to repeat the words *mi niño chiceritito* (my darling little pet), a phrase daily employed by its mistress, as she gave her favourite its food. Large sums were offered by several persons, in the hope of obtaining so great a curiosity as a singing bird that could speak, but his owner was not inclined to part with her treasure; and after tending it for several years with the utmost watchfulness, had the grief to lose it by poison, administered, it was supposed, by some one whose offers had been refused. When in confinement this species soon becomes tame.

Beckstein says, "A young male which I had put into a hothouse for the winter was accustomed to receive a meal-worm from my hand every time I entered. This took place so regularly that immediately on my arrival he placed himself near the little jar where I kept the meal-worms. If I pretended not to notice this signal, he would take flight, and, passing close under my nose, immediately resume his post; and this he repeated, sometimes even striking me with his wing, till I satisfied his wishes and impatience."

THE WHITE THROAT.

The WHITE THROAT (*Curruca cinerea*) is five inches and three-quarters long, and eight inches and a quarter broad; the wing and tail each measure two inches and a half. This species is at once recognisable by the slender body, comparatively long tail, white throat, and the reddish border that surrounds its upper wing-covers. The head, nape, back, and rump are yellowish grey, shaded with a faint reddish tinge; the under side is white, intermixed with reddish grey on the breast; the quills, tail, and feathers that form the wing-covers are greyish black, the latter being moreover broadly bordered with rust-red; the eye is brownish yellow, the upper mandible deep grey, the lower reddish grey, and the legs greyish yellow. In the female and young birds these various colours are not so clearly defined as in the plumage of the adult male. These Warblers are met with in North-western Asia and throughout the larger portion of Europe, from Sweden and Russia, as far south as the northern parts of Spain. They are numerous in Great Britain, where they arrive in about the third week in April; and are only seen in Southern Spain and Greece during the migrating season, when they wander even into Africa. We ourselves have shot them in Eastern Soudan, and other naturalists have found them in the western portions of the African continent. Like other

THE WHITE THROAT (*Curruca cinerea*).

members of their family, they display extraordinary dexterity in making their way through the most intricate masses of foliage or the very innermost recesses of their favourite brushwood, and, under ordinary circumstances, rarely venture forth upon the outer branches of their leafy retreats. Despite their unusual shyness, they are, however, occasionally bold enough to extend their foraging excursions as far as the neighbourhood of fields of corn, and in Southern Europe they especially favour the crops of ripe maize. During their flight they generally keep near the ground, and, though unable to continue their course for any great length of time, propel themselves through the air with rapid and powerful strokes of their wings. The song of this species, which, though varied, is decidedly inferior in quality to those of many of its congeners, is frequently poured forth when the bird is on the wing, at an altitude of some twenty or forty yards above the ground, or as it rises fluttering, or sinks with closed pinions towards the earth.

"The note of the White Throat," says Gilbert White, "which is continually repeated, and often attended with odd gesticulations on the wing, is harsh and unpleasing. These birds seem of pugnacious disposition, for they sing with an erected crest and attitudes of rivalry and defiance, are shy and wild in breeding-time, avoiding frequented neighbourhoods, and haunting lonely lanes and commons—nay, even the very tops of the Sussex Downs, where there are bushes and coverts; but in July and August they bring their broods into gardens and orchards, and make great havoc among the summer fruits."

"One that I possess," says Mr. Sweet, "will sing for hours together against a Nightingale, now, in the beginning of January, and will not suffer itself to be outdone. When the Nightingale raises its voice, it also does the same, and tries its utmost to get above it. Sometimes in the midst of its song it will run up to the Nightingale, stretch out its neck as if in defiance, and whistle as loud as it can, staring it in the face. If the Nightingale attempts to peck it, away it flies in an instant, darting round the aviary, and singing all the time. These birds are easily taken in a trap baited with a living caterpillar or butterfly. One that I caught last spring sung the third day after being placed in confinement, and continued to sing all through the summer; but this was most likely in consequence of a tame one being with it, which also sung at the same time."

The nest is usually constructed in thick bushes or in long grass, and is often placed quite close to the ground, or in the most unlikely situations—the iron-work on a lamp in Portland Place and in a gate at Hampton Court Palace are instanced by Mr. Jesse as having been employed for this purpose. Externally, the walls of the nest are formed of grass, often interspersed with wool, and lined with some delicate material. The eggs, from four to six, are laid at the end of April. These differ remarkably from each other, not only as to size, but in form and hue, some being white, yellow, grey, or greenish, while others are slate colour, yellowish brown, or yellowish green, streaked, spotted, or marbled with various darker shades. Two broods are always produced within the season.

THE SPECTACLED WARBLER.

The SPECTACLED WARBLER (*Curruca conspicillata*) is five inches long and six and three-quarters broad; the wing and tail each measure about two inches. The head of this species is dark grey; the upper part of the body of a lighter grey, shaded with rust-red; the under side and quills are grey; the outer web of the secondaries and of the feathers on the upper wing-covers broadly edged with rust-red; the outer web of the exterior tail-feathers is white, almost to the root; the inner web of all the tail-feathers is decorated with a more or less distinctly indicated triangular patch. The light reddish-brown eye is surrounded by a white ring; the feathers above the ears are grey; the beak flesh-pink at its base, and black at the tip; the foot is either yellowish pink or reddish grey. The young are distinguishable from the adult birds by the pure grey colour of their breast. In this species the fourth wing-quill is the longest. The Spectacled Warblers inhabit all of the more southern countries of Europe, and usually remain throughout the year in their native lands. In their habits they closely resemble the species above described, but are generally met with in districts overgrown with low bushes and thistles. We learn from Wright that two broods are produced within the year, the first eggs being laid about February.

THE WHITE-BEARDED WARBLER.

The White-bearded Warbler (*Curruca leucopogon*) is one of the most attractive members of this family; the entire upper portion of the body is of a beautiful dark grey, the under side greyish white, the throat bright rust-red, adorned with a narrow white line, which passes from the base of the beak to the shoulders; the reddish eye is surrounded by a circle of red feathers, while those over the ears are brown; the quills and tail-feathers are dark brown, the outer web of the exterior tail-feathers being partially white, and the inner web decorated with a triangular white spot; the other feathers are merely edged with white, the eyelid is light red, the beak greyish black, the upper mandible tipped with reddish grey; the foot is also of the latter shade. The females and young are similarly coloured, but are without the red feathers on the throat. This species is four inches and three-quarters long, and six inches and three-quarters broad; the wing measures two inches and a quarter, and the tail two inches and one-sixth.

The White-bearded Warblers inhabit the dwarf woods of oleanders, evergreens, cistus, and elm that clothe some of the mountainous districts of Southern Europe and North-western Africa. Within and around these bosky retreats they seek their favourite insect fare with the mouse-like movements that characterise their family; but, unlike the species above mentioned, they are at little pains to conceal themselves at the approach of a stranger, and are generally to be seen perching in pairs upon the outer branches of their favourite shrubs, whilst they carry on their chase, now darting into the air to snap up a passing insect, now diving within the foliage to seize an unlucky beetle or caterpillar, as it takes its morning walk upon the leaves. The nest of this species is thicker and much more neatly constructed than those already described; the four or five eggs that form a brood have a dirty white shell, spotted with yellowish brown and olive green; the markings generally form a wreath at the broad end.

THE FIRE-EYED WARBLERS.

The Fire-eyed Warblers (*Pyropthalma*), as they have been called by Bonaparte, on account of their bare and brightly coloured eyelids, represent a group recognisable from the True Warblers by the comparative shortness of their very rounded wing, in which the third and fourth quills are of equal length, and also by the long, decidedly graduated tail and thick hair-like plumage.

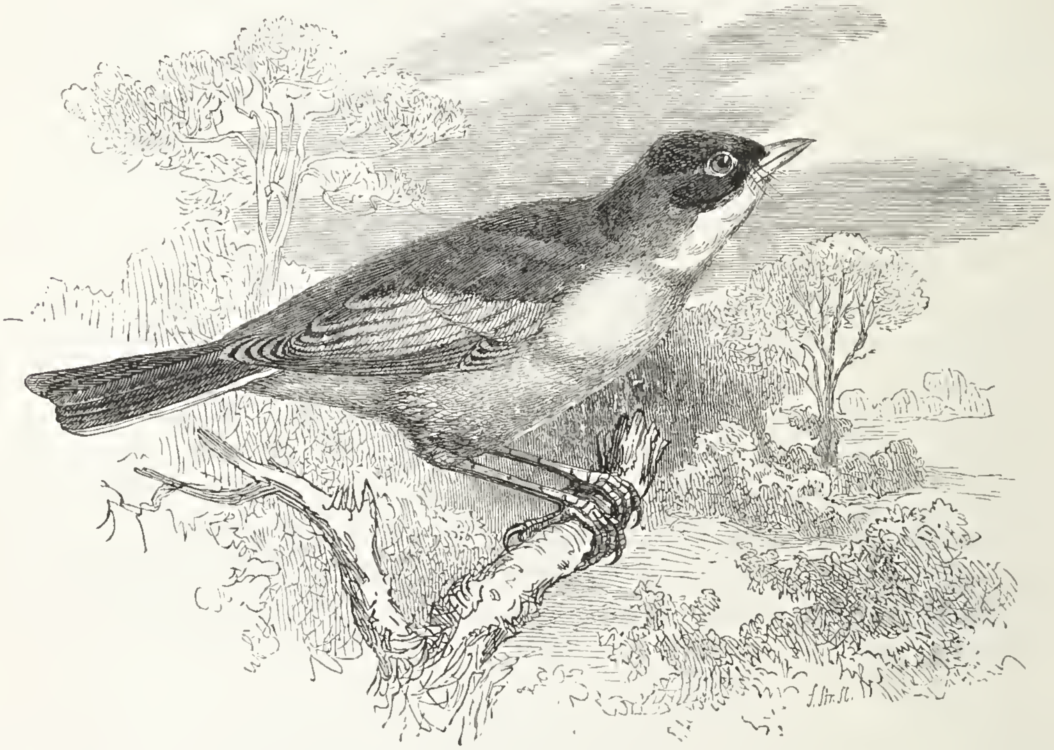
RÜPPELL'S WARBLER.

Rüppell's Warbler (*Curruca Rüppellii*) is of a dark grey on the upper parts of its body, and white beneath; the sides are shaded with grey, the rest of the under side with a reddish tinge; the head and entire throat are deep black, the cheek-stripes ash grey, and a streak that passes from the base of the beak and divides the black throat from the breast is pure white. The quills and feathers of the smaller wing-covers are brownish black, the latter bordered with white; the centre tail-feathers are black; the second, third, and fourth marked with white on the inner web, and those at the exterior are entirely white. The eye is light brown, the beak horn-colour, and the feet red. This species is five inches and a half long, and eight and a half broad; the wing measures eight inches and a half. The female is smaller and paler than her mate.

We are almost entirely without particulars as to the life of this bird, except that it inhabits South-eastern Europe, and usually frequents the bushes that grow in sandy or barren districts. It is numerously met with in Palestine, Asia Minor, and the islands of the Red Sea. We have also seen it in Egypt, though it usually only visits that country during the migratory season.

THE BLACK-HEADED FIRE-EYED WARBLER.

The Black-headed Fire-eyed Warbler (*Pyropthalma melanocephala*), the most numerous species of this group, is five inches and three-quarters long, and but seven broad; the wing measures at most two inches and one-sixth, and the tail two inches and a half. The upper portion of the body is greyish black, the under side white, shaded with red; the head is of velvety blackness, the throat pure white; the wings and tail are black. The outer web of the first and the inner web of the next tail-feathers are white; the eye is brownish yellow, and its lid brilliant red; the back blue, and the feet reddish grey.



THE SPECTACLED WARBLER (*Curruca conspicillata*).

These birds inhabit the whole of Southern Europe, even to its smallest islands, and are especially numerous in Greece, Italy, and Spain; everywhere they frequent any situation covered with shrubs and bushes, and remain throughout the entire year within the limits of their native lands. Naumann tells us that the song of this species, which is very varied, and consists of prolonged piping notes, is constantly uttered both upon the wing and as the bird rises or sinks rapidly through the air.

When singing in the trees the male usually selects a prominent branch, and accompanies his performance by agitating his tail, erecting the feathers that form his crest, and bowing his head repeatedly; should any unusual sound occur, the bold little creature is at once on the alert to discover the meaning of the noise, and invariably hurries to the spot to mingle in every fray or take his part in any dispute that arises among his feathered companions. The female is not of an inquisitive and intrusive disposition, and, as she usually remains quietly hidden among the sheltering branches, is but seldom seen. During the breeding season, the male is even still more pugnacious and determined. He resents all intrusions upon his privacy by approaching almost close to the unwelcome visitor, loudly uttering his shrill, clear call with such rapidity as to make it appear but one prolonged note. In such moments of excitement the black crest upon his head is raised aloft, and the bare circles round the eyes gleam with fiery brilliancy. The nest, which is substantial in its structure, is usually placed in a bush or tree, and carefully concealed from view. The four or five eggs have a dirty white shell delicately marked with extremely fine dark specks, sometimes they are also decorated with blue markings and a wreath of olive-brown spots at the broad end. We have found nests containing newly-laid eggs from March to August. After the breeding season is over the parents fly about for some time in company with their young, and occasionally they remain associated during the winter.

THE SARDINIAN FIRE-EYED BLACK-HEAD.

The SARDINIAN FIRE-EYED BLACK-HEAD (*Pyropthalma sarda*), as its name implies, is a native of Sardinia; it is likewise met with in Malta, Greece, and the neighbouring islands, also, according to Homeyer, upon the Balearic Islands. In this species the head, nape, and back are blackish grey, lightly tinted with red; the under side is pale grey, the throat whitish; the quills and tail-feathers are brownish black edged with reddish grey, except the two exterior tail-feathers, which are bordered with white on the outer web. The eye is nut brown, the bare eyelid yellowish pink, and the beak black, except at the yellow base of the lower mandible; the foot is light grey. The colours of the female are somewhat paler. Salvatori tells us that this interesting Warbler is one of the commonest birds in Sardinia, and that it frequents all parts of the country, whether mountain or plain, provided the ground is covered with bushes or heather. Homeyer speaks in the same terms of such as inhabit the Balearic Isles, and tells us that their movements closely resemble those of mice, as they scurry over the ground from stone to stone and shrub to shrub; now running into a hole, now closely examining every little twig of a bush, with a rapidity and dexterity far exceeding even that of the Wren. During the whole time the bird is in motion the tail is brandished aloft with most grotesque effect. The voice much resembles that of a male Canary in some of its notes, while others are like the sound of a tiny bell; the call-note is exactly similar to that of the Redbacked Shrike. The nest is placed in thick bushes, and is formed of grass, lined with horsehair and a few feathers; the interior is deep, and the walls very thin. The four or five eggs have a greenish-white shell, clouded with yellowish green, or marked with spots of various shades and with black streaks; in size they resemble those of the Goldfinch. The plumage of the young is like that of the parents, except that the head is paler, and the eyelid only slightly touched with red. Three broods are produced within the year, the first being laid in August. This species does not migrate.

THE PROVENCE FIRE-EYED WARBLER.

The PROVENCE FIRE-EYED WARBLER, called in England the DARTFORD WARBLER (*Pyropthalma Provincialis*), a species nearly allied to the above, is dark grey on the upper portion of its body, and deep red on the under side, streaked upon the throat with white. The quills and tail-feathers are brownish grey, the four exterior tail-feathers having white tips; the eye is light brown, its lid bright red; the beak black, with the exception of the base of the under mandible, which is of a reddish hue, as is the foot. The length of this bird is from four inches and three-quarters to five inches, and its breadth from six inches to six and a quarter. The wing measures two inches, and the tail from two inches and a quarter to two inches and a half. This beautiful active little Warbler inhabits not only the most southern part of Europe, but is also met with in Great Britain, Asia Minor, and North-western Africa. Hedges, shrubs, and brushwood are its favourite haunts, and in them it is to be seen hopping briskly about in search of insects, or perching at the end of a branch while it carols forth its blithe song, accompanying the notes by gesticulations with its tail, and a display of the feathers on its throat. Should its quiet retreat be disturbed by an unusual sound, the vigilant little minstrel is at once silent, and after a momentary survey of surrounding objects from the end of a projecting bough, promptly retires to seek safety amid the densest part of the foliage. "The male," as Mudie informs us, "often hovers about the bushes, uttering his chirping cry, which, being rather feeble and hurried, can scarcely be termed a genuine warble. At these times, from the thickness of the head and neck, the long tail, and the short and rounded wings, the bird has some resemblance to a dragon-fly. A spy-glass must be used when observing him, for if one venture near he instantly drops into the bush, where it is in vain to search for him; and the alarm-note he then utters is not unlike the cry of some of the field-mice."

This bird was first seen in England by Pennant, who, having killed his specimens in the neighbourhood of Dartford, gave it the name of the Dartford Warbler. Since that time it has been found on furzy commons in several of the southern counties, and been proved to build and reside throughout the year in this country. Colonel Montague, who met with this bird in Devonshire, gives the following account of his search after its nest:—"Mr. Stackhouse, of Pendennis, assured me that his brother had observed these birds for several years to inhabit furze near Truro. This information redoubled, if possible, my ardour, and I visited a large furze bush in my neighbourhood, where I had seen them the previous autumn, and upon close search, on the 16th of July, three old birds were observed, two of which had young, as evidenced by their extreme clamour and by frequently appearing with food in their bills. On the 17th my researches were renewed, and, after three hours' watching the motions of another pair, I discovered the nest with three young; it was placed among the dead branches of the thickest furze, about two feet from the ground, slightly fastened between the main stems, not in a fork. On the same day a pair were discovered carrying materials for building, and, by concealing myself in the bushes, I soon discovered the place of nidification, and, upon examination, I found the nest was just begun. As early as the 19th the nest appeared to be finished; but it possessed only one egg on the 21st, and on the 26th it contained four, when the nest and eggs were secured. The nest is composed of dry vegetable stalks, particularly goose grass, mixed with the tender dead branches of furze, not sufficiently hard to become prickly. These are put together in a very loose manner, and intermixed very sparingly with wool. In one of these nests was a single Partridge's feather. The lining is equally sparing, for it consists only of a few dry stalks of some species of carex without a single leaf of the plant, and only two or three of the panicles. This thin flimsy structure, which the eye pervades in all parts, much resembles the nest of the Whitethroat. The eggs are also somewhat similar to those of the Whitethroat, weighing only twenty-two grains; like the eggs of that species, they possess a slight tinge of green; they are fully speckled all over with olivaceous brown and cinereous, on a greenish-white ground, the markings becoming more dense and forming a zone at the larger end. The young were considered no small treasure, and were taken as soon as the proper age arrived for rearing them by hand, which is at the time the tips of the quills and the greater coverts of the wings expose a portion of the fibrous end. By experience grasshoppers (which at this season of the year are to be procured in abundance) are found to be an excellent food for all insectivorous birds; these, therefore, at first were their constant food, and, after five or six days, a mixture of bread and milk, chopped boiled meat, and a little finely powdered hemp and rape seed, made into a thick paste, to wean them from insect food by degrees; this they became more partial to than even grasshoppers, but they afterwards preferred bread and milk, with pounded hemp seed only, to every other food, the smaller house or window flies excepted. Before these birds left their nest I put them into a pair of scales, and found that they weighed two drachms and a quarter each. At this time they ate in one day one drachm and a quarter each, so that in two days each consumed more than its own weight. Such a repletion is almost incredible, and doubtless greatly beyond what the parent birds could usually supply them with, which, by observation, appeared to consist of variety, and, not unfrequently, small *Phælenæ;* their growth, however, was in proportion to the large supply of food. This interesting little family began to throw out some of their mature feathers on each side of the breast about the middle of August, and the sexes became apparent. At this time they had forsaken their grasshopper food, feeding by choice on the soft victuals before mentioned. The nestling attachment of these little birds was very conspicuous towards the dusk of the evening; for a long time after they had forsaken the nest they became restless, and apparently in search of a roosting-place, flying about the cage for half an hour, or until it was too dark to move with safety, when a singular soft note was uttered by one which had chosen a convenient spot for the night, at which instant they all assembled, repeating the same plaintive cry. In this interesting scene, as warmth was the object of all, a considerable bustle ensued, in order to obtain an inward berth, those on the outside alternately perching upon the others, and forcing in between them; during this confusion, which sometimes continued for a few minutes, the cuddling note was continually emitted, and in an instant all was quiet. Nothing can exceed the activity of these little creatures; they are in perpetual motion the whole day, throwing themselves into various attitudes and gesticulations, erecting the crest and tail at intervals, accompanied by a double or triple cry, which seems to express the words 'Cha! cha! cha!' They frequently take their food while suspended to the wires with their heads downwards, and not unusually turn over backwards on the perch. The males, of which there were three out of the four, began to sing with the appearance of their first mature feathers, and continued in song all the month of October, frequently with scarcely any intermission for several hours together; the notes are entirely native, consisting of considerable variety, delivered in a hurried manner, and in a much lower tone than I have heard the old birds in their natural haunts. This song is different from anything of the kind I ever heard, but in part resembles that of the Stone Chat. The Dartford Warbler will sometimes suspend itself on wing over the furze, singing the whole time, but is more frequently observed on the uppermost spray in vocal strain for half an hour together."

The same habits were observed by "Rusticus," of Godalming, who, writing in "Loudon's Magazine," says:—"Its habits are very like those of the little Wren; and when the leaves are off the trees, and the chill winter winds have driven the summer birds to the olive gardens of Spain, or across the Straits, the Furze Wren, as it is there called, is in the height of its enjoyment. I have seen them by dozens skipping about the furze, lighting for a moment on the very point of the sprigs, and instantly diving out of sight again, singing out their angry, impatient ditty, for ever the same. They prefer those places where the furze is very thick, high, and difficult to get in."

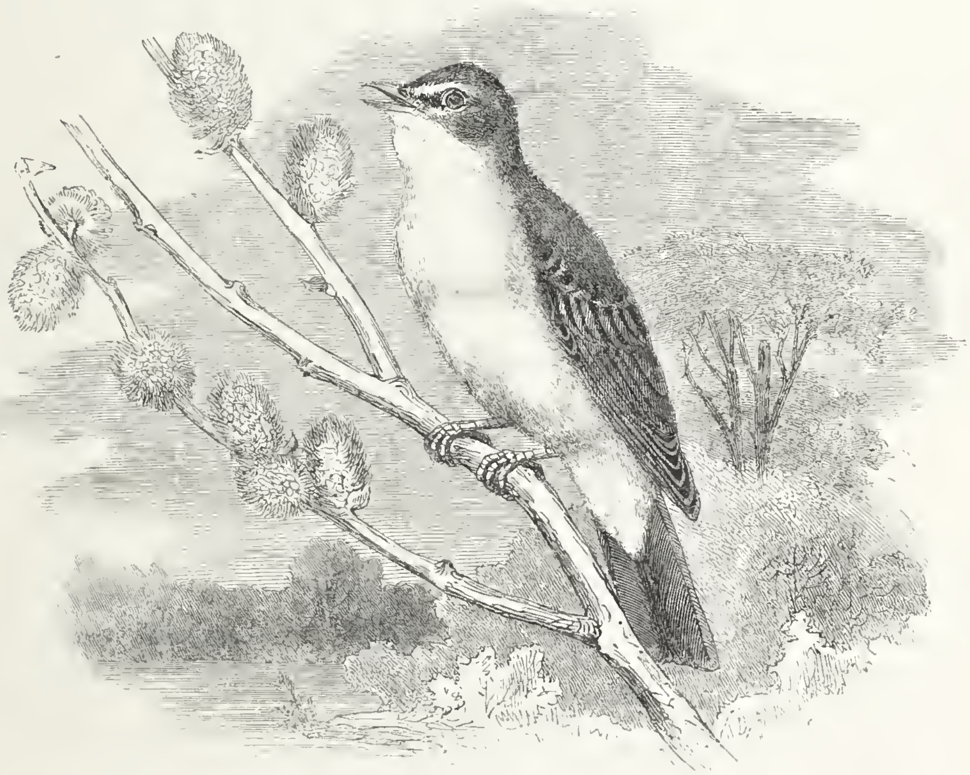
The period of incubation commences early in the spring, each brood (of which there are always two, sometimes three, in the course of the season) consisting of four or five eggs. When first fledged the nestlings are unable to fly, and run over the ground exactly after the fashion of young mice. Whilst the little family is in this helpless condition, the parents are constantly in a state of great excitement and anxiety; their cry of admonition or warning is then to be heard incessantly; even when the young are sufficiently advanced to perch upon the branches, the same cautious watchfulness against approaching danger is maintained, and we have often amused ourselves by observing the precipitation with which the whole group of little Blackheads disappear as the obedient nestlings hurry to some safe shelter within the bush or tree, at the first signal from their vigilant parents. Such of these birds as inhabit mountain ranges do not migrate; in Spain they live at an altitude of 3,000 feet above the sea, and even when the snow begins to fall they merely come into the valleys below, and never wander to any great distance from their native haunts.

The TREE WARBLERS (*Phylloscopi*) constitute a family whose members are met with throughout the world. With the exception of one group, all are small, slender, delicately-shaped birds, with comparatively long wings, in which the third, fourth, and fifth quills usually exceed the rest in length. The tail is of moderate size, either quite straight or slightly incised at the extremity, and these tarsi are of medium height. The beak is awl-shaped, slender, rather flat at its base, and in some instances somewhat broader than it is high. The plumage is soft, and very uniform in colour; it is usually of a pale green or brown on the back, and yellowish on the under side. All the species with which we are acquainted principally frequent the summits of trees, but come down occasionally to seek their insect food upon the rushes, or in the fields of corn; they seldom consume berries, unless compelled to do so by hunger. All are active and restless, and display great agility, both among the branches and when running over the surface of the ground; their powers of flight are also good, their voice always agreeable, and their senses well and sometimes highly developed. Such as inhabit Southern Europe, Asia, and Africa do not migrate, whilst those in milder latitudes leave their native lands late in the autumn, and return to them again in the early spring. These latter species generally breed twice during the summer, and lay from four to seven delicate white or pale rose-red eggs, marked with dark spots. The nests of all are constructed with the utmost care.

THE FIELD TREE WARBLER, OR WILLOW WREN.

The Field Tree Warbler, or Willow Wren (*Phyllopneuste Trochilus*), is a slenderly-formed bird with long wings, in which the third and fourth quill exceeds the rest in length. The tail is of moderate size, and slightly incised at its extremity; the beak is delicate, broad at its base, and compressed at its tip. The lax plumage is of an olive green upon the upper parts of the body, and white on the under side, the breast being tinged with greyish yellow; a yellowish-white stripe passes over the eyes, and the cheek stripes are deep grey; the quills and tail-feathers are grey, edged with green, and the lower wing-covers light yellow; the eye is brown; the beak and legs grey. After the moulting season the under side becomes a pale yellow. This species is four inches and eleven lines long, and seven inches four lines broad; both wing and tail measure about two inches. The sexes are alike in colour; the young are greyish green above and yellowish-white on the throat; the rest of the under side is white, tinted with yellow.

The Field Tree Warblers inhabit the whole continent of Europe, a large portion of Northern Africa, and some parts of North America. During their migrations they also occasionally visit India and Northern Africa. For the most part, however, such as quit Northern and Central Europe for the winter do not wander farther than its more southern countries. These birds alike frequent highlands and lowlands, and usually pass the summer months in disporting themselves about the leafy summits of lofty trees. In autumn, on the contrary, they come down into the brushwood and beds of reeds or rushes, or, in Southern Europe, alight in the fields of maize in quest of food; dense forests they appear almost entirely to avoid. The song of this species is pleasing and flute-like; its chief beauty, however, consists in the delicacy of intonation and rapid swelling and sinking of sound in which the male indulges, as he sits with drooping wing, inflated throat, and raised crest, upon a projecting branch, or flutters rapidly from bough to bough, in order to attract the attention of his intended mate; at such times the female also utters a faint twittering kind of song. Like the Tree Warblers, these birds are particularly active among the foliage; they do not creep in the quiet mouse-like manner above described, but flutter about with a constant brisk agitation of the tail that cannot fail to betray their presence to an observant eye. While perched the body is usually held erect, but is kept somewhat bowed down as the bird hops upon the ground; this latter mode of progression is accomplished with some difficulty, each long hop, or rather leap, being followed by a succession of rapid gesticulations with the head before another effort is made. Their flight is capable of being long sustained, but is somewhat inelegant, and appears unsteady, as it is usually undulating and carried on by a series of very irregular efforts. The same restless activity is also observable in the conduct of these birds towards all their feathered companions; the slightest injury or annoyance is resented with much fury, and even the sportive exercises in which they frequently indulge usually terminate with a series of violent flappings and peckings given on either side, rather in downright earnest than in play. The nest is carefully concealed in a hollow in the ground or in the trunk of some tree, and built entirely by the female, who commences her operations by hacking at the hole or aperture till it is of the requisite depth. The utmost caution is displayed by the anxious mother to prevent the discovery of her future abode. For this reason she seldom works except during the early morning, and at other times never remains near the scene of her operations. The nest itself is cone-shaped, with thick walls, in one side of which a hole is left for entrance; dry leaves, stalks, moss, and grass are employed for the exterior, while the interior is snugly lined with feathers, those of partridges being usually preferred. From five to seven eggs form a brood; these are laid about May, and are oval in shape, smooth, glossy, and white, more or less spotted with light red. During the period of incubation the female displays much anxiety for the safety of her eggs, and even when alarmed will not leave them until she is forcibly removed. At mid-day her mate takes his place on the nest for an hour or two, but with this exception gives her no assistance; both parents, however, combine to rear and protect the nestlings, and endeavour to attract the attention of any intruder on their privacy



THE FIELD TREE WARBLER, OR WILLOW WREN (*Phyllopneuste Trochilus*).

and divert it to themselves, by hurrying to a distance and uttering cries of distress. The young are fledged by the end of May, and a second brood is produced in June.

The LEAF WRENS (*Reguloides*) constitute a group inhabiting Southern Asia and the provinces of the Himalaya. In these birds the beak is comparatively shorter than that of the true Tree-Warblers. The wings are long and more pointed, and the legs shorter and weaker. All such species as inhabit India frequent mountainous districts.

THE LEAF WREN.

The LEAF WREN (*Reguloides Proregulus*), a member of the above group, that wanders from its native lands and appears in Europe, is greyish green on the upper portion of the body, and yellowish white on the under side; the rump is bright green; a yellowish-green line passes over the top of the head; and a reddish-yellow streak over the eye; the wings are also decorated with two whitish-yellow stripes. The eye is dark brown; the beak blackish brown above, and of a yellowish shade beneath; the foot is pale brown. The body is four inches long and six and a quarter broad; the wing measures two inches and the tail an inch and a half. This bird is a native of Central Asia, and is commonly met with in India and China during the winter; it has also been seen repeatedly in Southern Europe, and more rarely in the central countries of our continent. The nest of this species is spherical, and is constructed of fibres of various kinds woven neatly together with spiders' webs, and fastened firmly upon a branch at a considerable height from the ground. This elegant little abode is entered by two holes, the one at the side and the other in front; the latter, which is used most frequently, is protected by a projecting cover.

The GARDEN WARBLERS (*Hypolais*), by far the most attractive group of this numerous race, resemble their congeners in little except the colour of their plumage, and are readily distinguishable from them by the comparative compactness of their body, length of wing (in which the third and fourth quill are longer than the rest), and the thickness of their tarsus. The beak is large, broad, and powerful, compressed at its margin; and the tail is incised at its extremity. The habits and song of the Garden Warblers differ no less remarkably from those of other members of their family; their nests are open above, and are built upon trees, instead of upon the ground; even the eggs do not resemble those laid by other Warblers.

THE MELODIOUS WILLOW WREN.

The MELODIOUS WILLOW WREN (*Hypolais hortensis* or *Hypolais salicaria*), one of the five species of this group known in Europe, is greenish grey on the upper portions of the body, and light sulphur yellow beneath; the quills are pale blackish brown, edged with green on the outer web; the tail-feathers are lighter than the quills, and are bordered on the exterior web with dirty white; the eye is dark brown, the beak greyish brown, and reddish yellow at the base of the lower mandible; the foot is light blue. The length of the body is five inches and a half, the breadth nine inches and a half; the wing measures three inches and one-third, and the tail two inches. Central Europe must be regarded as the actual home of this pretty bird, but it is also met with in the northern part of the Continent as far as Scandinavia; it is but rarely seen in the south, where it is replaced by very similar species. Its autumnal migrations extend as far as Africa, and are commenced unusually early in the season, as this bird is particularly delicate and quite unable to endure the vicissitudes of climate so prevalent on our continent at the close of the year; nor does it venture to return until the spring is far advanced, and the trees are completely covered with their leaves. As their name implies, the

Garden Warblers almost invariably resort to cultivated districts, and prefer orchards, hedges, and gardens. When compelled to occupy the latter situations they generally frequent such trees as skirt the denser parts of the thicket, into whose recesses they rarely venture to penetrate, and are never met with in forests of fir or pine, or in mountain regions. In the localities favoured by their presence a certain limited district is selected, and to this the birds regularly return, season after season, defending their little territory from all intrusion with the utmost courage and obstinacy. In an instance that came under our own notice a pertinacious individual occupied the same domain for seven successive years. The voice of this species varies considerably in quality, but is never remarkable for sweetness; indeed, its only charm may be said to consist in the spirit and animation with which the singer pours out his notes, as he flutters about the highest trees, or perches, with body erect and raised crest, upon a projecting branch. When upon the ground the Melodious Willow Wren hops with difficulty, and usually with the head and neck thrown forward; in the air, on the contrary, it moves with rapidity and lightness. Insects of all kinds constitute its principal means of subsistence, but it also devours fruit, and does considerable damage in the cherry orchards. It occasionally destroys bees, and in an instance that came under our own notice the offending bird actually beat against the hives in order to compel its unconscious victims to come out. If undisturbed the Melodious Willow Wren breeds but once in the year, usually at the end of May or beginning of June; the eggs, from four to six in number, are rose-red or reddish grey, veined and spotted with black or reddish brown. The very beautiful purse-shaped nest is firmly built with grass, leaves, or any vegetable fibres, intermixed with spiders' webs, paper, and similar materials; the interior is lined with feathers and horsehair. The parents brood alternately, and the young are hatched within thirteen days; the nestlings are reared upon insects, and protected most carefully from danger by the wily stratagems above alluded to.

THE CHIFF-CHAFF.

The Chiff-Chaff (*Hippolais* or *Sylvia rufa*) is four inches and three-quarters long and seven broad; the bill is brownish black, inclining to yellow at the edges; the mouth of a pale saffron-yellow tint. The plumage below is pale lemon yellow; the belly mixed with silvery white, and the vent and under tail-covers inclining to deep straw yellow; the quill and tail-feathers are dusky, edged with yellow, except the exterior tail-feather on each side, which is plain. The female resembles her mate.

This bird visits England about the end of March. It makes its nest upon the ground, constructing it externally of dry leaves and coarse grass, with a lining of feathers. The eggs are six in number, white, and speckled at the larger end with purplish red, and an occasional single speck on the sides. Its double note, which is four or five times repeated, resembles the words "Chip-Chop," and hence its name of Chiff-Chaff. It is said to feed principally on the larvæ of the different species of *Tortrix* that are rolled up in the unfolding buds of various trees, rendering good service in devouring those insects that would otherwise destroy a great part of the fruit. If the weather is fine and mild, these birds may be seen among the most forward trees in orchards, flying from branch to branch and from tree to tree, chasing each other, and catching the gnats and small flies that come in their way. In the summer they feed on the aphides which infest trees and plants, and they are also very partial to small caterpillars, flies, and moths.

Mr. Sweet says the Chiff-Chaff is easily taken in a trap, and soon becomes tame in confinement; one that he caught was so familiar as to take a fly from his fingers; it also learned to drink milk out of a tea-spoon, of which it was so fond that it would fly after it all round the room, and perch on the hand that held it without showing the least symptom of fear.

THE ASHY GARDEN WARBLER.

The Ashy Garden Warbler (*Hypolais cinerescens*) is entirely greyish green on the upper portion, and whitish green on the under side of the body. The eye is dark brown; the upper mandible horn colour, and the lower one yellowish grey; the legs horn grey. The length of the bird is five inches and seven lines, and the breadth about seven inches and ten lines; the wing measures two inches and seven lines, and the tail two inches and three lines; the female is about one line shorter, and from two to four lines narrower than her mate. This species inhabits Southern Europe, and is especially numerous in the highly cultivated districts of Spain; there, as elsewhere, it frequents vineyards, olive plantations, and fruit gardens, and ventures freely into the immediate vicinity of the towns and villages; it appears entirely to avoid mountain ranges and rocky localities. Unlike the Willow Wren, the Ashy Garden Warbler is socially disposed towards those of its own race, and it is not uncommon to see the pairs not only living close to each other in the utmost harmony, but building upon the same tree. Such as we have observed seemed entirely without fear of men, for we have frequently known them to make their nests close to crowded thoroughfares, in small gardens, and, in one instance, in close vicinity to a public summer-house in Valencia, that was usually illuminated with lanterns until after midnight. The movements of these birds are similar to those of the species last described, but their song, although monotonous and without any particular beauty, somewhat resembles that of the Sedge Warblers. The breeding season commences about the first week in June, and continues until the end of July. The nest, which is built on a high tree and fastened firmly between two upright and parallel twigs, has a thick outer wall of grass, wool, stalks, and similar materials woven together very compactly; the interior is usually about two inches deep,

THE CHIFF-CHAFF (*Hippolais rufa*).

and one inch and a half broad. The eggs, from three to five in number, are of an oval shape, and have a pale grey or reddish shell, marked with dark brown or black. Both parents feed and tend their nestlings with great care and affection. This species is sometimes seen in North-western Africa.

The MARSH WARBLERS (*Calamodytæ*) are recognisable by their slender body, narrow, flat-browed head, short rounded wing, in which the second or third quill, or both, exceed the rest in length; moderate-sized tail, which is either rounded, graduated, or conical; and powerful foot, armed with strong toes and large hooked claws. The beak varies somewhat in different species. The plumage of all is compact, harsh in texture, and usually of a greyish-yellow or olive-green tint. In all the different species a light stripe passes over the region of the eye.

THE REED WARBLER (*Acrocephalus turdoides*).

The Marsh Warblers inhabit all parts of our globe, but are particularly numerous in the Eastern Hemisphere. As their name indicates, they principally frequent marshy districts overgrown with reeds, rushes, or long grass, and only occasionally seek their food upon bushes; they entirely avoid mountain ranges, as the water that flows in the vicinity of the latter is too frequently agitated to suit their requirements. All lead a somewhat retired life within the limits of their favourite haunts, but are readily discovered by their very peculiar yet by no means unpleasing song, which is to be heard almost throughout the entire day. They fly but little, and with an unsteady fluttering movement, keeping the tail outspread, and always appear very unwilling to mount into the air. They hurry over the ground with wonderful rapidity, and slip in and out of tiny crevices with a celerity that fully equals that of a mouse. They also hop nimbly from point to point, and climb the perpendicular stems of reeds or long grass with the utmost facility. Insects of all kinds afford them their principal means of subsistence, and they also occasionally eat berries; worms they utterly reject. Such as inhabit northern climates migrate at the approach of winter. The purse-like nest built by these birds is hung from a reed or twig close to the water's edge, and most artistically constructed; its bottom being heavy, the sides long, and the top turned inwards, so as to prevent the young from falling out, should the unsteady little structure be exposed to a violent wind. It is a remarkable fact that the Marsh Warblers appear to be fully aware that they may occasionally expect an unusual rise of water in the lake or stream near which they live, and always anticipate the danger that from this cause might accrue to the little family, by suspending the nest at a proportionate height from the ground. The eggs are hatched by both parents, and the young tended and fed long after they are fully fledged.

The REED WARBLERS (*Acrocephalus*) constitute a group possessing most of the characteristics that distinguish this family. In these birds the beak is almost straight, or very slightly curved at its extremity; the wings are of moderate size, the third and fourth quills exceeding the rest in length; the exterior tail-feathers are somewhat shortened, and the foot unusually powerful. The compact and unspotted plumage is usually olive green on the upper portion of the body, and reddish or yellowish white beneath.

THE TRUE REED WARBLER.

The True Reed Warbler (*Acrocephalus turdoides*) is about eight inches long and eleven broad; the wing measures three inches and a half, and the tail four inches and a quarter. This species is yellowish grey on the mantle, and reddish white on the under side, shaded with grey upon the throat. The female is somewhat smaller and paler than her mate. The Reed Warblers inhabit Europe, from South Scandinavia to Greece and Spain; in the extreme south and in Northern Africa they are replaced by nearly allied species. Everywhere they frequent such marshy localities as are overgrown with reeds, and are never seen in mountainous regions or woodland districts, or even upon the trees that grow near their favourite haunts. The migratory season commences in September; but during their wanderings, which often extend as far as Central Africa, they pass direct from one piece of water to another, and never turn aside in their course to linger in any but marshy or well-watered places. Shortly after the return of these birds, at the end of April or beginning of May, their loud resonant voices are to be heard not only from sunrise to sunset, but frequently throughout the night. The song is a strange combination of a great variety of harsh quavering notes, more nearly resembling the croaking of the frogs whose domain they share than the notes of any of the feathered creation. While singing the males usually perch upon a reed or twig, with drooping wing, outspread tail, inflated throat, and open beak, and go through their noisy performance with an energetic desire to rival every bird around them; such is the evident satisfaction they exhibit at the result of their efforts, as to make the listener overlook the want of vocal talent, in his amusement at the conceit of the self-complacent songsters. The nests are commenced about June, and are built near together, suspended firmly from the reeds that overhang the surface of the pond or stream, some four or five being drawn firmly together to make a safe support.

Like other Marsh Warblers, they display wonderful instinct in the situation they select, and invariably build at such a height as is secure from any unusual rising of the water; indeed, it has been repeatedly observed that in certain years the nests of the Reed Warblers were constructed at an unusual distance from the ground, and this precaution has always been explained later in the season by the fall of extraordinary heavy rain, that would inevitably have swept away the little structures had they been placed in the situation ordinarily selected. The nest itself is very long in shape, with the top turned inwards, to render the nestlings secure in a high wind. The walls are thick, formed of grass, stalks, fibres, and wool, lined with cobwebs, horsehair, and similar materials. The eggs, four or five in number, are of a bluish or greenish-white tint, spotted and veined with dark brown and grey; the young are hatched in about a fortnight, should the parent be undisturbed, and are tended with great affection, even long after they are fully fledged. The Reed Warblers, as we learn from Dr. Bennett, are commonly met with in Australia. "One species" (*Acrocephalus Australis*), he tells us, "is very numerous about the sedgy localities of the Nepean river; and although it has been denied that any of the Australian birds are endowed with a musical voice, this bird has a very loud, pleasing song, enlivening the places it frequents. It is a migratory species, arriving in the spring season—*i.e.*, about September—and taking its departure as winter commences. It builds its nest, suspended among the reeds, in a similar manner to its congeners in Europe; it is composed of the thin epidermis of reeds interwoven with dried rushes. The sexes are alike. I did not see the eggs in the nests, but they are stated to be four in number, of a greyish-white colour, thickly marked all over with irregular blotches and markings of yellowish brown, umber brown, and bluish grey."

The large Reed Warbler of India (*Acrocephalus brunnescens*) is, according to Jerdon, very similar to the European species, but differs in being something smaller in the relative size of the primaries, the greater length of the wing, and the greater intensity of its colour.

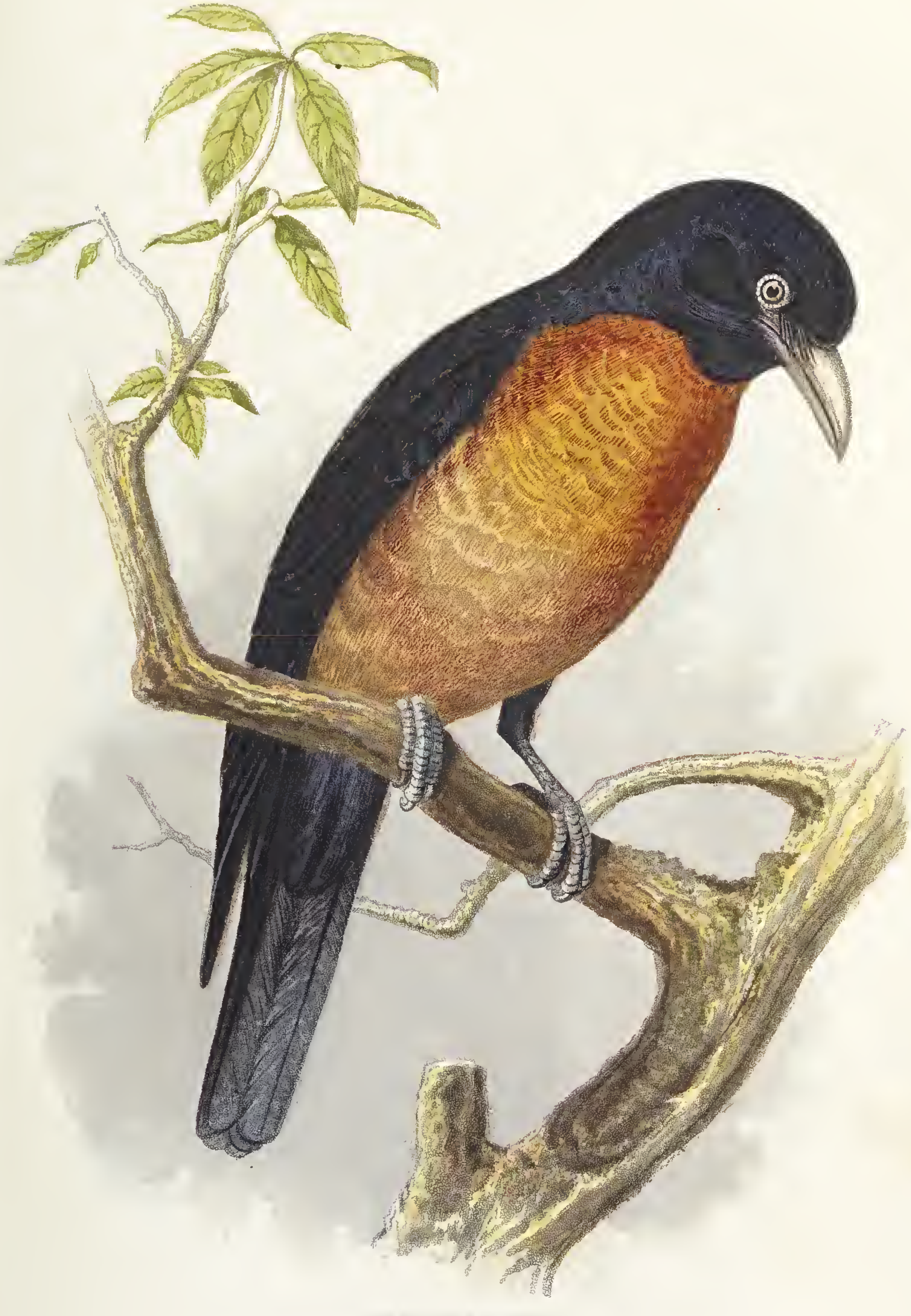
The larger Reed Warbler is found in most parts of India in the cold weather, for it is only a winter visitant. It extends into Assam, Aracan, and China, in some parts of which latter country it probably breeds. It frequents high reeds and grasses, high grain fields and gardens, where it hunts among the rows of peas, beans, and other vegetables. It clings strongly to the stalks of grain, and makes its way adroitly through thick grass or bushes, concealing itself when observed, and being with difficulty driven out. It feeds on small grasshoppers, ants, and other insects. "I have," continues our author, "heard it occasionally utter a harsh, clucking kind of note."

The SEDGE WARBLERS (*Calamodus*) are distinguished from the birds above described by their inferior size, and by the comparative shortness of their wings, in which the third quill is the longest; the tail, moreover, is very decidedly rounded, and their plumage spotted.

THE SEDGE WARBLER.

The Sedge Warbler (*Calamodus phragmitis*) is about five inches and a half long, and eight and a quarter broad; the wing measures two and a quarter, and the tail two inches. The plumage on the upper portion of the body is yellowish brown, spotted with dark brown, the under side a reddish white; a yellow streak passes over the eyes, and the posterior quills have light edges. The eye is brown, the beak brownish black, except at its margins, and the base of the under mandible, which are of a light yellowish red; the foot is dirty yellow. In the young, the mantle is reddish grey and the under side reddish yellow, spotted on the region of the crop with dark grey or brown. This species inhabits all the European countries that extend from 68° north latitude as far as Greece and Spain, usually arriving in April and leaving again in October, when it wanders as far as Northern Africa. In the latter continent it is often seen upon the plains covered with *halfa* grass, but in Europe it always frequents such marshy districts as are overgrown with rushes, sedge, grass, and small-leafed water plants. Its flight is very unsteady, but in other respects its movements are unusually nimble and agile; the song is pleasing, flute-like, and very varied. Except during the period of incubation, which commences in June, these birds usually lead a very retired life amid the beds of grass or rushes, but at the latter season they emerge, and take up their quarters on the surrounding trees and bushes, where they engage in a series of vocal concerts, each inspired with the hope of outdoing its numerous rivals in the favour of some attractive female. Should any one of the feathered competitors venture to intrude upon the same branch as the energetic singer he is at once driven with much violence from the spot, to prevent a repetition of the offence. During the whole time that the female broods the male bird exhibits the same anxious desire to please her, and is often heard gaily carolling from dawn of day till far into the night. "The song," says Mudie, "is hurried but varied, not so much in the single stave as in its having several of them, which would lead one to imagine that there were several birds. It sings in the throat, and gives a sort of guttural twist to all it utters." At times, in his excitement, he rises rapidly into the air, and, after hovering for a few moments with wings raised high above the body, slowly descends or drops, like a stone, to the spot whence he ascended. At this period of the year, not only the manner of flight, but the whole nature of the male bird seems changed, and he exhibits a fearlessness that contrasts strangely with his usual cautious and timid demeanour. Like other members of this family, the Sedge Warbler subsists principally upon insects, and occasionally devours various kinds of berries. The nest, which is placed amongst clumps of sedge, grass, or rushes, on marshy ground, at not more than a foot and a half from its surface, is firmly suspended to the surrounding stalks, and formed of hay, stubble, roots, and green moss, woven thickly and firmly together, and lined with horsehair, feathers, and delicate blades of grass. The eggs, from four to six in number, are of a dirty white, more or less shaded with

THE SEDGE WARBLER (*Calomodus phragmitis*).



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THE ORONOKO CORACINA — Coracina Orenocensis

About ⅔ Nat. size

green, and spotted and streaked or marbled with brownish grey. Both parents assist in the labour of incubation, and hatch the young in about thirteen days, if undisturbed; but, if molested, they frequently desert the nest, and at once commence preparations for another brood. At first, the female alone appears to feel solicitude or care for her eggs, her mate usually amusing himself until they are hatched, by singing and fluttering about throughout the entire day, and exhibiting no distress, even should both mother and brood be removed or destroyed. No sooner, however, have the nestlings left the shell than his interest is awakened, and he tends and protects them with anxious care. The young quit the nest as soon as they are fledged, and run like mice about the surrounding stalks, until they are strong enough to fly.

"The Sedge Warbler," says Mr. Yarrell, "is a summer visitor to this country, arriving in April and leaving again in September, but on one occasion a single specimen was observed near High Wycombe, in Buckinghamshire, in winter. Immediately on its arrival it takes to thick cover by the water-side, and is much more frequently heard than seen; though it may occasionally be observed flitting on the uppermost twigs of the willows it inhabits, giving rapid utterance to a succession of notes as it flies from one branch to another. White, of Selborne, appears to have first made Pennant acquainted with this species, and, with his usual acuteness, detailed the habits of the bird, particularly remarking its power of imitating the notes of other birds and its singing at night. The observations of others in various localities have confirmed the accuracy of his remarks, and the Sedge Warbler, in the situations it frequents, may be heard throughout the day, and frequently during a summer night, imitating the notes of various birds in a somewhat confused and hurried manner; and should he desist for a few minutes' rest, it is only necessary to throw a stone or clod of dirt among the bushes—he will immediately commence a series of repetitions, but seldom quits his covered retreat." "The marshy banks of the Thames, on either side of the river, where beds of reeds or willows abound," continues the same accurate writer, "are well stocked with this bird; although, from the wet and muddy nature of the ground, they are not very easy to get at. In the southern and western counties it occurs in Hampshire, Dorsetshire, Devonshire, Cornwall, and in Wales; and is a summer visitor to the north of Ireland. It occurs also in the marshes of Essex, in Suffolk, Norfolk, Lincolnshire, Yorkshire, Northumberland, and Lancashire, and was traced by Mr. Selby, in Sutherlandshire, to the northern extremity of the island; it was found pretty generally distributed along the margins of the lochs, particularly where low birchen coppice and reedy grass abounded. The well-known babbling notes of this wakeful little songster proclaimed its presence in many unexpected situations."

The GRASSHOPPER WARBLERS (*Locustella*) constitute a group presenting the following characteristics:—Their slender body is much deeper than it is broad; the awl-shaped beak, wide at its base; the foot of moderate height, and toes long; the wings, in which the second and third quills exceed the rest in length, are short and rounded; the tail is broad, of medium size, graduated at its extremity, and the feathers are of unusual length. The rest of the plumage is soft and delicate, usually of a brownish green above, with dark spots on the back and upper part of the breast. The voice of these birds is very remarkable, the sounds they produce being very similar to the chirping notes of the cricket or grasshopper. All frequent localities overgrown with grass or plants, and differ as to their habits in many essential particulars from other members of the family.

THE GRASSHOPPER WARBLER.

The Grasshopper Warbler (*Locustella certhiola* or *L. Rayii*) is from four inches and three-quarters to five inches and a half long, and from seven and a half to eight broad; the wing measures two inches and a half, and the tail from one inch and five-sixths to two inches. Upon the upper part of the body the plumage is olive grey or yellowish brown, decorated with oval brownish-black spots; the throat is white, the upper breast reddish yellow spotted with dark grey, the belly whitish or yellowish white, somewhat deeper in hue at its sides; the lower tail-covers white, with light brown spots upon the shafts; the quills are blackish brown, with narrow yellowish-grey edges, which increase in breadth towards the roots; the tail-feathers are of a deep greenish brown, striped with a darker shade and surrounded by a light border; the eye is greyish brown, the beak horn grey, and the foot light red. After the moulting season the under side is yellower than before. In the young the breast is unspotted.

The Grasshopper Warbler is found throughout Central Europe and Central Asia. In England it arrives about April and departs in September, and during the course of its migrations wanders as far as China. Unlike most of its congeners, this bird does not confine itself to any particular situation, but occupies fields and woodland districts as frequently as marshy tracts or brushwood. Everywhere, however, it seeks the shelter of the densest foliage of the bushes, or creeps about close to the ground beneath the overspreading leaves of plants growing by the water-side. In both these situations it displays the utmost activity in evading pursuit; if alarmed, the tail is brandished aloft, and the drooping wings agitated from time to time; upon the ground it runs with ease, keeping the neck outstretched forward, and the hinder portion of the body constantly in motion. Its flight is rapid, light, and very irregular.

"Nothing can be more amusing," says Gilbert White, "than the whisper of this little bird, which seems close by, though at a hundred yards' distance; and when close to your ear is scarce louder than when a great way off. Had I not been acquainted with insects, and known that the grasshopper kind is not yet hatched, I should have hardly believed but that it had been a *Locusta* whispering in the bushes. The country people laugh at you when you tell them that it is the note of a bird. It is a most artful creature, skulking in the thickest part of a bush, and will sing at a yard's distance, provided it be concealed. I was obliged to get a person to go on the other side of a hedge where it haunted, and then it would run creeping like a mouse before us for a hundred yards together, through the bottom of the thorns, yet it would not come into fair sight; but in a morning early, and when undisturbed, it sings on the top of a twig, gaping and shivering with its wings."

The food of this species varies somewhat with the situation it occupies, but is always of the same description as that employed by the other members of the family. The nest, which is most carefully concealed in a great diversity of situations, is neatly formed of green moss, or similar materials, lined with fibres and horsehair. The eggs, from three to six in number, are of a dull white or pale rose red, marked with reddish or brownish spots, strewn most thickly over the broad end, and forming occasionally a slight wreath. It is probable that both parents assist in the process of incubation. In some seasons the Grasshopper Warbler produces two broods, the first at the beginning of May and the second at the end of June.

The BUSH WARBLERS (*Drymoicæ*) constitute a very extensive group, closely allied to those above described. They are of small size, with short, rounded wings, comparatively slender and more or less graduated tail, and moderately large and powerful feet. The beak is of medium length, compressed at its sides, slightly curved along the culmen; the plumage is usually of sombre appearance. Various members of this group inhabit all parts of the world, and alike frequent low brushwood, shrubs, reeds, long grass, or beds of rushes. In all these situations they display extraordinary agility, but their powers of flight are, without exception, feeble and clumsy. In disposition they are sprightly, and very noisy, although almost invariably without vocal talent. Beetles, worms, snails, and grubs constitute their principal means of support. Their nests are always remarkable for their great beauty, some species exhibiting great artistic skill in their manner of *weaving* their materials together, while the most famous members of the group, the wonderful "Tailor Birds," literally *sew* leaves to each other, and employ them to enclose the actual nest, or bed for the young.

THE PINC-PINC.

The PINC-PINC (*Cisticola schœnicla*) is very recognisable by its short, delicate, and slightly curved beak, long tarsi, large toes, short tail, and rounded wing, in which the fourth quill exceeds the rest in length. The plumage of the adult is yellowish brown, the head being spotted with three blackish and two light yellow streaks. The nape and rump are brownish and unspotted; the throat and belly are pure white; the breast, side, and lower tail-covers reddish yellow; the quills are greyish black, edged on the outer web with reddish yellow. The centre tail-feathers are reddish brown, the rest greyish brown, bordered with white at the end, and decorated with a heart-shaped black spot. The eye is brownish grey, the beak horn colour, and the foot reddish. The young are only distinguishable from the adults by the lighter colour of the under side. This species is four inches and a quarter long, and two and a quarter broad; the wing measures one inch and three-quarters, and the tail an inch and a half. The female is a quarter of an inch shorter and half an inch narrower than her mate. The Pinc-Pinc, as it is called by the Algerines, from a supposed resemblance of those syllables to its note, is numerously met with in Central and Southern Spain, Southern Italy, Greece, Sardinia, Algiers, and India.

"This bird," says Jerdon, "is now considered identical with the European one, and is also spread over the greater part of Africa. It is found in every part of India, frequenting long grass, corn and rice fields. It makes its way adroitly through the grass or corn, and often descends to the ground to pick up insects; but I do not think that it habitually runs along, as the name given by Franklin would imply, but it rather makes its way through the grass or reeds, partly hopping and partly flying. When put up it takes a short jerking flight for a few yards, and then drops down into the grass again. It feeds on ants, larvæ of grasshoppers, and various other small insects. As Blyth remarks, 'It may commonly be observed to rise a little way into the air, as is the habit of so many birds that inhabit similar situations, repeating at intervals a single note, "Jik! jik!"' During the breeding season the male bird may be seen seated on a tall blade of grass, pouring forth a feeble little song. The nest is made of delicate vegetable down, woven into the stems of a thick clump of grass, and forming a compact and very beautiful fabric, with a small entrance near the top, and the eggs are four or five in number, translucent white, with reddish spots. It has been noticed that whilst the hen is laying the male bird builds the nest higher."

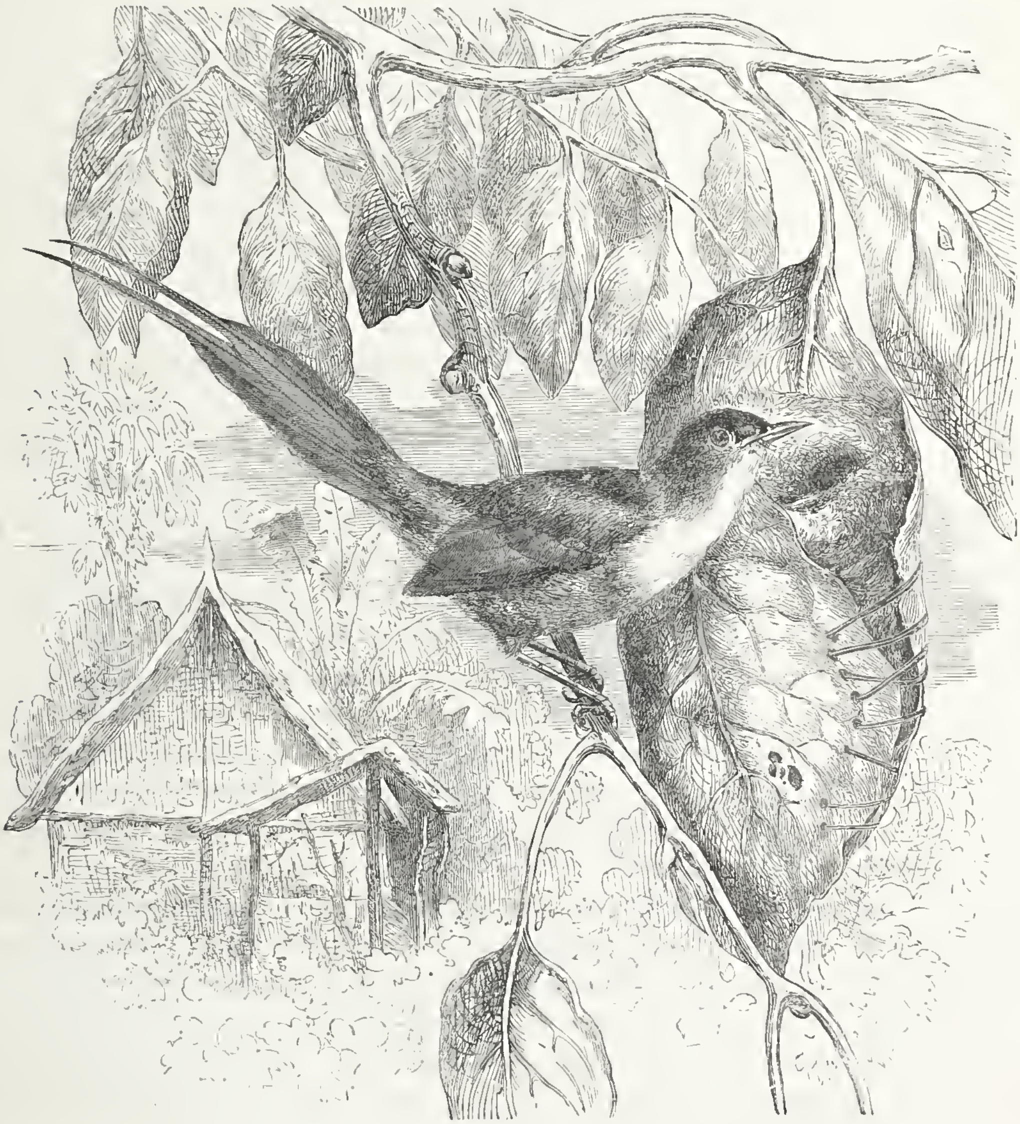
According to Hausmann it is quite stationary in its habits, and our own observations corroborate this statement. In Spain it occupies low-lying places, and in Sardinia, we learn from the above-mentioned authority that it frequents such flat parts of the sea-coast as are marshy and overgrown with grass, but also frequently breeds and lives in fields of corn. In North-western Africa it seeks meadows and pasture-land, and in India dwells on any spot covered with either long grass, corn, or rice. During the breeding season the male is extremely active, and may be constantly seen flying restlessly about, uttering its loud note, and fluttering boldly round and about any intruder on its privacy; at other times it is somewhat timid. All kinds of caterpillars, dipterous insects, and small snails constitute the principal food of the Pinc-Pinc; these it gathers from the leaves or seeks upon the ground, casting forth the harder portions after the softer parts are digested. The nest, which we have repeatedly found among long grass, reeds, and rushes, about half a foot from the ground, is thus described by Le Vaillant:—"It is," he says, "usually placed among prickly bushes, but sometimes on the extreme branches of trees. It is commonly very large, some apparently larger than others, but this difference of size is only external; in the interior they are all of nearly the same dimensions, namely, between three and four inches in diameter, while the circumference is often more than a foot. As the nest is composed of the down of plants, it is of snowy whiteness or of a brownish hue, according to the quality of the down produced by the surrounding shrubs. On the outside it appears to be constructed in an irregular and clumsy manner, in conformity with the curvatures of the branches on which it is so firmly attached (part of them passing through its texture), that it is impossible to move it without leaving one-half behind. If, however, externally, the nest has the appearance of being badly constructed, we shall be all the more surprised to find that so small a bird, without other instrument than its bill, wings, and tail, should have felted vegetable down in such a manner as to render it a fabric as united and firm as cloth of good quality. The nest itself is of a rounded shape, with a narrow neck at its upper part, through which the bird glides into the interior. At the base of this tubular neck there is a niche, or shelf-like appendage, like a small nest resting against the large one, which serves as a momentary resting-place, by means of which the Pinc-Pinc may pass more easily into the nest, a feat which, without such a contrivance, it might have some difficulty in accomplishing, as it could not move through so small an entrance on the wing, and the walls of the tube are so slightly formed, that the bird would injure them were it constantly to rest upon them. This little appendage is as firmly felted as the interior. Sometimes there are two or three of these perches. It has until lately been supposed that the female alone undertook the whole labour of building this strange and beautiful structure, but we learn from Tristam, whose statement is confirmed by Jerdon, that the male does considerably more than half of the work. "I had the good luck," says Tristam, "to find a nest that was just commenced, and was able daily to observe the whole process. The first egg was laid before the outer wall was more than an inch high, the male continuing to labour without intermission, until by the time the nestlings were hatched the fabric was quite firm, and full three inches in height. The eggs vary considerably in appearance; those we found in Spain were of a uniform light blue, others again are bluish green, sparsely marked with small or large brown, reddish, or black spots, or pure white spotted with bright red. The young are tended by both parents with much affection; the male especially appears entirely to lay aside his usual timidity, and will frequently follow an intruder for some distance, uttering low cries, as if to scare him from the spot."

The proceedings of a family of young birds are most entertaining to behold, as they climb and flutter about the grass or corn, while the busy father and mother seek food for their hungry progeny. No sooner has one of the parents succeeded in capturing an insect than the whole flock hurry with tails upraised to receive it, each scrambling with earnest endeavour to be first, and obtain the coveted morsel. Should danger be at hand, the mother disappears with her young to some safe retreat, while the father rises into the air, and flies about in his usual manner. Savi tells us that the Pinc-Pinc breeds thrice in the year—in April, June, and August. We ourselves have found nests in May, June, or July.

The TAILOR BIRDS (*Orthotomus*) constitute a remarkable group of Bush Warblers, and are at once recognisable by their elongated body, much rounded wing, in which the fifth and sixth quills are the longest; their short abruptly rounded or graduated tail, composed of very narrow feathers; and by their powerful feet with high tarsi and short toes; the beak is long, straight, broad at the base, and pointed at the tip, and in every respect admirably adapted for the sewing operations it has to perform; the base of the bill is surrounded by a few delicate bristles; the plumage is smooth and brightly coloured, usually green on the back and rust-red on the head.

THE LONG-TAILED TAILOR BIRD.

The Long-tailed Tailor Bird (*Orthotomus longicauda*) is of a yellowish olive-green on the mantle, red on the crown of the head, and greyish red upon the nape; the under surface is white with faint blackish spots upon the sides of the breast. The quills are brown edged with green, the tail-feathers brown shaded with green, those at the exterior are tipped with white. In the male the two centre tail-feathers are considerably prolonged. The length of this species is six inches and a half, the wing measures two, and the tail three inches and a half; the female is not more than five inches long, and her tail does not exceed two inches. The Tailor Birds are found throughout all parts of India, from the Himalayas to Cape Comorin, also in Ceylon, Burmah, and the neighbouring countries, frequenting such localities as are not entirely destitute of trees or bushes. In these situations they usually live in pairs or small families, and pass their days in hopping nimbly from twig to twig in search of insects, caterpillars, and larvæ, upon which they subsist. When moving over the ground or eating they keep the tail erect, and elevate the feathers upon the head. The manner in which



THE LONG-TAILED TAILOR BIRD (*Orthotomus longicauda*).

they construct their strange and beautiful nest is truly wonderful. Having chosen a leaf of adequate dimensions, the ingenious sempstress draws the edges together by means of her bill and feet, then, piercing holes through the approximated edges, she secures them in their place by means of cotton threads, the ends of which she ties into small bunches and thus fastens them, so as to prevent them from slipping through. Sometimes the Tailor Bird, having picked up a fallen leaf, fastens it to one still growing on the tree by sewing the two together in the manner above described, and thus prepares a pensile cradle in which the nest is constructed. The interior is lined with a thick layer of cotton, flax, and other vegetable fibres, mixed with a little hair, and on this comfortable bed the eggs are laid and the young live secure from the attacks of monkeys or snakes. The brood consists of three or four eggs, which are white, spotted with brownish red at the broad end.

"This bird is most common," says Jerdon, "in well-wooded districts, frequenting gardens, hedgerows, orchards, low jungle, and even now and then the more open parts of high tree jungles. It is usually seen in pairs, at times in small flocks, incessantly hopping about the branches of trees, shrubs, pea rows, and the like, with a loud, reiterated call, or picking various insects, chiefly ants, cicadellæ, and various small larvæ, off the bark and leaves, and not unfrequently seeking them on the ground. It has the habit of raising its tail whilst feeding, and hopping about, and at times, especially when calling, it raises the feathers, and displays the concealed black stripes on its neck. The ordinary note of the Tailor Bird is, 'To-wee! to-wee! to-wee!' or, as it is syllabised by Layard, 'Pretty! pretty! pretty!' When alarmed or angry it has a different call. It is a familiar bird, venturing close to houses, but, when aware that it is watched, it becomes wary and shy.

"The Tailor Bird makes its nest with cotton wool and other soft materials, sometimes also lining it with hair, and draws together one leaf or more, generally two leaves, on each side of the nest, and stitches them together with cotton, either woven by itself, or cotton thread picked up, and, after passing the thread through the leaf, it makes a knot at the end to fix it. I have seen a Tailor Bird at Saugor watch till the *dirzee* (native tailor) had left the verandah where he had been working, fly in, seize some pieces of thread that were lying about, and go off in triumph with them. This was repeated in my presence several days running. I have known many different trees selected to build in; in gardens very often a guava-tree. The nest is generally built at from two to four feet above the ground. The eggs are two, three, or four in number, and, in every case I have seen, were white, spotted with reddish brown, and chiefly at the large end."

Colonel Sykes tells us that the eggs are crimson, but he has probably mistaken the nest and eggs of *Prinia socialis*, which last are sometimes of a uniform brick-red. Hodgson suspects that there are two species confounded under one name, as he has on several occasions got unspotted *blue* eggs from a Tailor Bird's nest. These were probably those of *Prinia gracilis*, the eggs of which are blue. Layard describes one nest "made entirely of cocoa-nut fibre, encompassed by a dozen leaves of oleander, drawn and stitched together. I cannot call to recollection ever having seen a nest made with more than two leaves."

THE EMU WREN.

The Emu Wren (*Stipiturus malachurus*), one of the most remarkable birds found in Australia, is distinguished by the very unusual formation of the web of the six feathers that compose the tail, a peculiarity most observable in the male. The upper part of the body is brown, striped with black; the top of the head rust-red; the chin and throat pale blueish grey; the rest of the under side is bright red, the quills are dark brown edged with reddish brown, and the tail-feathers dark brown; the eye is reddish brown, and the beak and feet brown. In the female the top of the head is streaked with black, and the region of the throat red instead of blue.

The genus *Stipiturus*, according to Mr. Gould, is a form entirely confined to Australia. These birds frequent extensive grass-beds, particularly those which occur in humid situations. They run quickly over the ground, and carry the tail erect, like the *Maluri*. Some slight variation occurs in specimens from Tasmania and Southern and Western Australia, but, probably, they are all referable to one species.

"The delicate little Emu Wren," says Dr. Bennett, "although formerly seen in great numbers in the vicinity of Sydney, is now very rare. It was also named the Cassowary Bird by the early colonists, from the peculiar feathers in the tail, and was first described in 1798, in the *Linnæan Transactions*. It is an active little creature, running rapidly among the grass, and, from the shortness of its wings, appears ill adapted for flight. Some years since it congregated in great numbers in the Sydney Domain, near the Botanic Garden, but for some time not one has been seen in that locality. This bird rarely perches on a bush at an elevation of more than three or four feet from the ground; it is usually observed darting quickly over the long grass, and, by its activity, readily eludes pursuit."

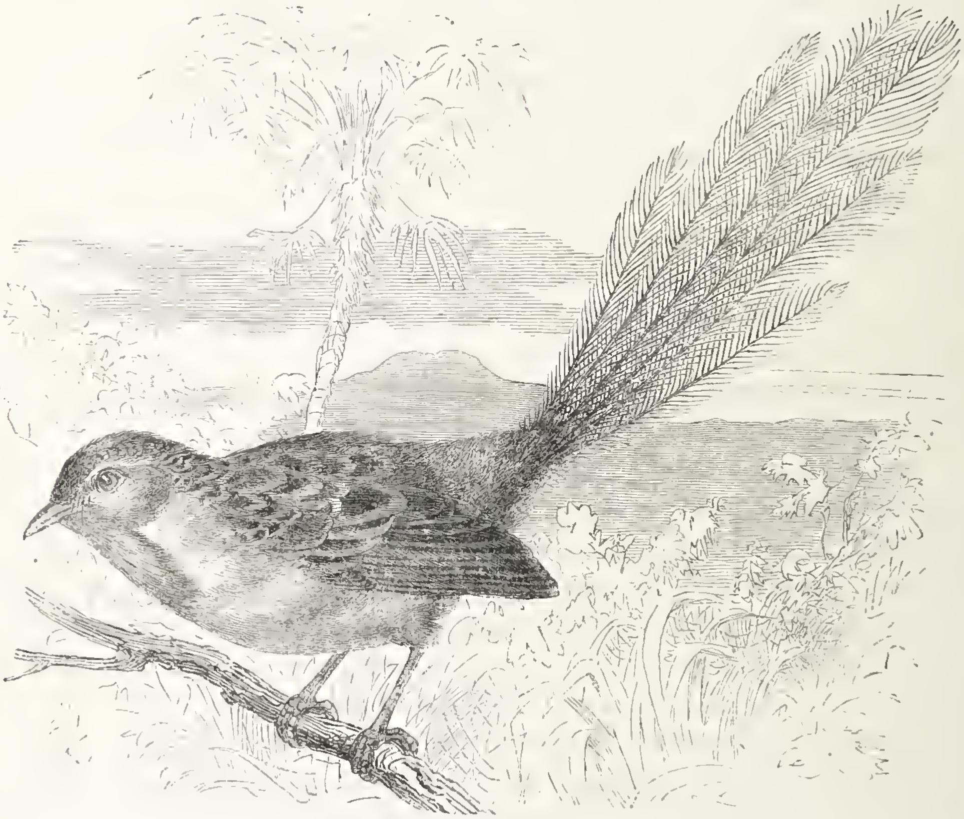
"This curious little bird," says Mr. Gould, "has a wide distribution, since it inhabits the whole of the southern portion of Australia, from Moreton Bay on the east to Swan River on the west, including Tasmania. Among the places where it is most numerous in the latter country are the swampy grounds in the neighbourhood of Recherche Bay in D'Entrecasteaux Channel, the meadows at New Norfolk, Circular Head, and Flinder's Island in Bass Straits. On the continent of Australia, Botany Bay and, indeed, all portions of the country having a similar character are favoured with its presence.

"The Emu Wren is especially fond of low, marshy districts, covered with rank high grasses and rushes, where it conceals itself from view by keeping near the ground, and in the midst of the more dense parts of the grass-beds. Its extremely short round wings ill adapt it for flight, and this power is consequently seldom employed, the bird depending for progression upon its extraordinary capacity for running; in fact, when the grasses are wet from dew or rain, its wings are rendered perfectly unavailable. On the ground it is altogether as nimble and active; its creeping, mouse-like motions, and the extreme facility with which it turns and bounds over the surface, enabling it easily to elude pursuit, and amply compensating for the paucity of its powers of flight. The tail is carried in an erect position, and is even occasionally retroverted over the back.

"The nest, which is a small ball-shaped structure, with rather a large opening on one side, is composed of grasses lined with feathers, and artfully concealed in a tuft of grass or low shrub. One that I found in Recherche Bay contained three newly-hatched young; this being the only nest I ever met with, I am unable to give any description of its eggs from my own observation; but the want is supplied by the following account of this species from the pen of Mr. E. P. Ramsay, published in the *Ibis* for 1865:—

"'I had for many days visited the swamps on Long Island, where these birds are very plentiful, in the hope of finding them breeding, but it was not till the 25th of September that I succeeded in discovering a nest, although I had watched them for hours together for several days. While walking along the edge of the swamp on that day a female flew from my feet out of an overhanging tuft of grass, growing only a few yards from the water's edge. Upon lifting up the leaves of the grass which had been beaten down by the wind, I found its nest carefully concealed near the roots, and containing three eggs. They were quite warm, and within a few days of being hatched, which may account for the bird being unwilling to leave the spot; for, upon my returning about five minutes afterwards, the female was perched upon the same tuft of grass, and within a few inches of whence I had taken the nest. The nest was of an oval form (but that part which might be termed the true nest was perfectly round), placed upon its side; the mouth very large, taking up the whole of the under part of the front. It was very shallow, so much so that if tilted slightly the eggs would roll out, being almost on a level with the edge. It was outwardly composed of grass, and the young dry shoots of the reeds which are so common in all the swamps near the Hunter River, lined with fine grass, roots, and, finally, a very fine green moss. It was very loosely put together, and required to be moved very gently to prevent its falling to pieces.

" 'The eggs are six lines and a half long by four and a half broad, they are sprinkled all over with minute dots of a light reddish brown, particularly at the larger end, where they are blotched with the same colour. One of the three had no blotches, but was minutely freckled all over. The ground-colour is a delicate white, with a blush of pink before the egg is blown.



THE EMU WREN (*Stipiturus malachurus*).

" 'The only note of the bird, besides a slight chirp when flushed and separated, is a twitter, not unlike a faint attempt to imitate the *Malurus cyaneus*. While in the swamp, which at that time was nearly dry, I observed several separate flocks; of these some were hopping along the ground, picking up something here and there, others, whose appetites seemed appeased, were creeping along through the reeds, about a foot from the ground, but as the reeds thickened I soon lost sight of them. They seldom took wing except when disturbed, and not always then, seeming very averse to showing themselves. While watching them, I observed one now and then hop to the top of a tall reed, as if to get a glimpse at the world above. Upon coming suddenly upon a flock and following them, they keep to the reeds just in front of you, and never take wing unless hard driven, when they separate, and do not collect for some time.

" 'The male is readily distinguished from the female by the blue colouring of the throat, and by a somewhat greater development of the tail-feathers. The decomposed or loose structure of these feathers, much resembling those of the Emu, has suggested the colonial name of the Emu Wren for this species, an appellation singularly appropriate, inasmuch as it at once indicates the kind of plumage with which the bird is clothed, and the Wren-like nature of its habits.'"

The WRENS (*Troglodytæ*) are small, compactly-built birds, with short wings and tails. Their beak is small, or of medium size, thin, awl-shaped, compressed at its sides, and slightly curved at its culmen; the feet are weak, short-toed, and the tarsi of moderate height; the wings, in which the fourth or fifth quill is the longest, are short, rounded, and much arched; the tail very short, conical, or slightly rounded. The plumage is usually reddish brown, marked with black. These little birds are to be met with all over the world, but are especially numerous in Europe, Asia, and America; everywhere they frequent the vicinity of trees or bushes, in whatever situation these are to be found, but most commonly prefer well-watered and cultivated districts. All the various species are restless, lively, and active; upon the ground, they hop with the utmost activity, and display a rapidity in creeping through the most tangled brushwood that is almost unrivalled. All are endowed with agreeable voices, and some American species sing very sweetly. The nests are generally of an oval shape, roofed above and furnished with a small entrance at the side; the materials employed vary considerably, according to the situations in which the nests are constructed, the places selected for building being sometimes curiously chosen. A Wren, as we are told by the Rev. J. G. Wood, made its nest in the body of a dead Hawk that was nailed to the side of a barn, and another in the interior of a pump, gaining access through the spout. As these birds testify little fear of man in South America, they are frequently provided with convenient receptacles for their nests, in order to induce them to build upon the roofs of the houses.

THE COMMON WREN (*Troglodytes parvulus*).

THE COMMON WREN.

The Common Wren (*Troglodytes parvulus*) is about four inches long, and from five inches and a half to six inches broad; the wing measures an inch and three-quarters and the tail about an inch and a half. Upon the upper portion of the body the plumage is reddish brown, streaked with pale black; the under side is paler, marked with undulating dark brown lines; a brown cheek-stripe passes across the eyes, and a narrow brownish white line above them. The centre feathers in the wing-covers are decorated with oval white patches, touched with black; the quills are deepish grey on the inner web, and on the outer alternately spotted or streaked with reddish yellow and black; the tail-feathers are reddish brown, lightest at the edges, and marked with undulating dark brown lines; the eye is brown; the beak and feet reddish grey. The female is paler than her mate, and the young have more spots on the under side, and fewer on the back, than the old birds. The Wren inhabits all parts of the continent of Europe, from Northern Scandinavia to the most southern confines of Spain and Greece; in the Faroë Islands it is replaced by a very similar but much larger species (*Troglodytes borealis*); and another but more spotted variety (*Troglodytes Naumanni*) is met with in some parts of Central Europe. In North-western Africa and Asia Minor it is also common, but is, we believe, never seen in other parts of Asia. Such as inhabit India are nearly allied but not identical species. Like most members of its family, the Common Wren is lively and social, constantly seeking the immediate vicinity of man. Its song consists of a great variety of clear piping notes, intermingled with numerous trills, and is poured out with an energy and power that appear really astonishing, if we consider the small dimensions of the little singer. Throughout almost the entire year this cheerful music is to be heard; no inclemency of weather appears to daunt the brisk but diminutive vocalist, who carols forth his joyful anticipations of the coming spring, even when the snow-covered ground renders it impossible for him to procure a sufficient supply of food, and cold and want have completely silenced all his feathered companions. Like those of other members of its family, the movements of this species in the trees and on the ground are extremely agile and lively, but its flight, even for a Wren, is weak and unsteady. So slight are its powers of endurance, that Naumann assures us that a man can readily run it down and capture it with the hand. Indeed, a curious practice, as we are told, "has prevailed from time immemorial in the south of Ireland, of hunting this harmless little bird on Christmas Day. The hedges are beaten with sticks, and when the unfortunate little creature is driven from its concealment, it is struck down with a second stick carried by each hunter. On St. Stephen's Day the dead birds are hung by the children on an ivy-bush decorated with bright ribbons, which they carry about with songs, and collect money to 'bury the Wren.' This cruel piece of folly is, we are happy to learn, now falling into disuse."

This pretty little bird lives principally upon insects and berries, and when these fall short, it often ventures fearlessly into houses and outbuildings, in the hope of obtaining a meal. The situation of the nest and the materials employed for building it vary considerably. Trinthammer mentions an instance in which one of these birds made its nest year by year in the hut of some charcoal-burners, following them season after season in all their wanderings; indeed, it is not uncommon for a pair to build many times, before they have satisfied their fastidious requirements; and, strange to say, a solitary male will often make several nests before it has selected a mate. Boenigk, who observed a Wren attentively from April to August, tells us that the male constructed four nests before it took a partner. After it had found a mate, both worked together at three different nests, each in succession being left uncompleted, until at last the female, despairing of obtaining a place wherein to deposit her eggs, deserted her capricious spouse, who consoled himself by constructing two more nests, which, like the rest, were never employed.

"It is remarkable," says Montague, "how the materials of the Wren's nest are generally adapted to the place: if built against the side of a hayrick, it is composed of hay; if against a tree covered with white moss, it is made of that material; and with green moss if against a tree covered with the same; thus instinct directs it for security." Mr. Jesse mentions that he possessed a nest "built amongst some litter thrown into a yard, which so nearly resembled the surrounding objects that it was only discovered by the birds flying out of it. Some of the straws that composed it were so thick that one wondered how so small a bird could have used them." A correspondent in the *Magazine of Natural History* says:—"In watching a pair of Wrens building their nest in an old road, I noticed that one confined itself entirely to the construction of the nest, which it never left for a moment, whilst the other was as incessantly passing and repassing with materials for the structure. These materials, however, this helper never once attempted to put into their places; they were always regularly delivered to the principal architect employed in constructing the building."

"I was not aware," says Mr. Weir, "it had been taken notice of by any naturalist that the European Wrens, or at least some of this species, take possession of their nests as places of repose during the severity of winter, until I perused a very interesting account of the habits of these little birds by Neville Wood, Esq., who says, 'Whether the nests in which one or two broods had been reared in the summer are tenanted every night throughout the winter by the old or the young birds is a question more curious than easy to determine, on account of the difficulty, almost impracticability, of catching the birds at night. This I have repeatedly endeavoured to effect without success. I am happy to say that, after much trouble, I have so far succeeded in determining this curious question. About nine o'clock of the evening of the 7th of March, in one of their nests which was built in a hole in an old wall, I caught the male and female, and three of the brood. The other four of the young birds which were also in the nest, made their escape. They were the Wrens I mentioned formerly as having occupied the two nests which wanted the lining of feathers.'"

"I know not," says Macgillivray, "a more pleasant object to look at than the Wren; it is always so smart and cheerful—to it all weathers are alike. The big drops of a thunder shower no more wet it than the drizzle of a Scotch mist; and, as it peeps from beneath a bramble, or glances from a hole in the wall, it seems as snug as a kitten frisking on the parlour rug."

"It is amusing," continues this writer, "to watch the motions of a young family of Wrens just come abroad. Walking among furze, or broom, or juniper, you are attracted to some bush by hearing issue from it a lively and frequent repetition of a sound which most resembles the syllable "Chit." On going up you perceive an old Wren flitting about the twigs, and presently a young one flies off, uttering a stifled 'Chirr,' while the parents continue to flutter about, uttering their loud 'Chit! chit! chit!' with indications of varied degrees of excitement."

The Wren produces two broods in the course of the year, the first in April, the second in July. The eggs, from six to eight in number, are large and round, of a pure white or yellowish white, delicately spotted with reddish brown or blood-red, these latter markings often taking the form of a wreath at the broad end. The male and female brood alternately for thirteen days, and cleanse the nest and feed their hungry family with great assiduity. The young remain for a considerable time with their parents, and generally return to pass the night in their old homes for some time after they are fully fledged. Although largely insectivorous, these hardy little birds are enabled to brave the severest winters, not only of our own climate but of still more northern regions. They are not uncommon in Zetland, where their sweet notes serve greatly to enliven the dreary landscape.

The MARSH WRENS (*Thryothorus*) are a group of American species, distinguished from other members of the family by their comparatively long, thin, and slightly-curved beaks.

THE CAROLINA WREN.

The CAROLINA WREN (*Thryothorus Ludovicianus*), according to the Prince von Wied, is five inches long and seven broad; the wing measures two inches and one-sixth, and the tail an inch and three-quarters. The plumage of the upper portion of the body is reddish brown, marked with undulating lines of a deeper hue; the chin and throat are white, the rest of the lower parts yellowish red, with black markings on the sides; a stripe over the eyes is white. The quills are blackish brown on the inner, and striped on the outer web. The feathers of the wing-covers are tipped with white. The eye is greyish brown; the upper mandible light grey, the lower one lead-colour, tipped with pale brown. This species is the largest and most numerous of all the many species of Wrens inhabiting North America; it is met with alike in mountain tracts, low-lying regions, dense forests, or even districts near the abodes of man.

"The quickness of the motions of this little bird," says Audubon, "is fully equal to that of the mouse. Like the latter, it appears and is out of sight in a moment; peeps into a crevice, passes rapidly through it, and shows itself at a different place in the next instant. When satiated with food, or fatigued with these multiplied exertions, the little fellow stops, droops its tail, and sings with great energy a short ditty, something resembling the words '*Come to me, Come to me*,' repeated several times in quick succession, so loud, and yet so mellow, that it is always agreeable to listen to its music. During spring these notes are heard from all parts of the plantations, the damp woods, the swamps, the sides of creeks and rivers, as well as from the barns, the stables, and the piles of wood within a few yards of the house. I frequently heard one of these Wrens singing from the roof of an abandoned flat boat fastened to the shore, a short distance below the city of New Orleans. When its song was finished, the bird went on creeping from one board to another, thrust itself through an auger-hole, entered the boat's side at one place and peeped out at another, catching numerous spiders and other insects all the while. It sometimes ascends to the higher branches of a tree of moderate size, by climbing along a grape-vine, searching diligently among the leaves and in the chinks of the bark, alighting sideways against the trunk, and conducting itself like a true Creeper."

The vocal capabilities of the Carolina Wren would appear to be respectable, and it can imitate with tolerable accuracy the notes of other birds. "Amidst its imitations and variations," says Nuttall, "which seem almost endless, and lead the stranger to imagine himself, even in the depth of winter, surrounded by all the quaint choristers of the summer, there is still with our capricious and tuneful mimic a favourite theme, more constantly and regularly repeated than the rest. This was also the first sound that I heard from him, delivered with great spirit, though in the dreary month of January. This sweet and melodious ditty—*tsee-toot*, *tsee-toot*, *tsee-toot*, and sometimes *tsee-toot*, *tsee-toot*, *seet*, was usually uttered in a somewhat plaintive or tender strain, varied at each repetition with the most delightful and delicate tones, of which no conception can be formed without experience. That this song has a sentimental air may be conceived from its interpretation by the youths of the country, who pretend to hear it say '*Swĕet-heart*, *swĕet-heart*, *sweet!*' Nor is the illusion more than the natural truth, for usually this affectionate ditty is answered by its mate, sometimes in the same note, at others in a different call. In most cases it will be remarked that the phrases of our songster are uttered in threes; by this means it will generally be practicable to distinguish its performance from that of other birds, and particularly from the Cardinal Grosbeak, whose expressions it often closely imitates, both in power and delivery. I shall never, I believe, forget the soothing satisfaction and amusement I derived from this little constant and unwearied minstrel, my sole vocal companion throughout many weary miles of a vast, desolate, and otherwise cheerless wilderness. Yet, with all his readiness to amuse by his Protean song—the epitome of all he had ever heard or recollected—he was still studious of concealment, keeping busily engaged near the ground, or in low thickets, in quest of his food; and when he mounted a log or brush-pile, which he had just examined, his colour, so similar to the fallen leaves and wintry livery of Nature, often prevented me from gaining a glimpse of the wonderful and interesting mimic."

"The nest of the Carolina Wren," says Audubon, "is usually placed in a hole of some low, decayed tree, or in a fence stake, sometimes even in the stable, barn, or coach-house, should it there find a place suitable for its reception. I have found some not more than two feet from the ground in the stump of a tree that had long before been felled by the axe. The materials employed in its construction are hay, grasses, leaves, feathers, and horsehair, or the dry fibres of the Spanish moss; the feathers, hair, or moss, form the lining, the coarse materials the outer parts. When the hole is sufficiently large, the nest is not unfrequently five or six inches in depth, although only just wide enough to admit one of the birds at a time. The number of eggs is from five to eight. They are of a broad oval form, greyish white, sprinkled with reddish brown. Whilst at Oakley, the residence of my friend James Perrie, Esq., near Bagon, Jura, I discovered that one of these birds was in the habit of roosting in a Wood Thrush's nest, that was placed on a low horizontal branch, and had been filled with leaves that had fallen during the autumn. It was in the habit of thrusting its body beneath the leaves, and, I doubt not, found the place very comfortable. They usually raise two, sometimes three broods in a season. The young soon come out from the nest, and, in a few days after, creep and hop about with as much nimbleness as the old ones. Their plumage undergoes no change, merely becoming firmer in the colouring."

THE HOUSE WREN.

The House Wren (*Thryothorus platensis*), a South American species, is brown on the upper portion of the body, shading into red towards the rump. The quills and tail-feathers are finely striped with blackish brown, the former edged with a paler shade on the inner web; a pale streak passes over the eye; the throat is white; the region of the cheek striped with brown; the throat, breast, and belly are pale reddish yellow, the sides of the breast being deepest in tint, and faintly streaked. The eye is deep brown; the beak dark grey, whitish at its base; the foot reddish brown. The length of the body is four inches and six lines, the breadth six inches; the wing measures one inch and ten lines, and the tail an inch and a half. "This agreeable singing bird," says the Prince von Wied, "may be regarded as replacing our Common House Sparrow about the Brazilian houses. In appearance and habits it closely resembles the Common Wren, and is constantly to be seen hopping nimbly about the gardens and over the roofs and fences, or creeping with astonishing quickness through tiny holes or compact hedges. Its loud, sweet-toned voice is very similar to that of the True Warblers. The nests, which are small and carelessly constructed, are generally built upon the house-tops, or in holes of walls; those we saw were open above and very shallow, formed externally of stalks and grass, thickly lined with feathers. The eggs, four in number, were rose-pink, marked with deep red."

THE FLUTE-PLAYER

The Flute-player (*Cyphorhinus cantans*), a very noted species of Wren inhabiting South America, represents a group distinguished by the following characteristics:—The beak is strong, compressed at its sides; the nostrils small, round, quite open, and surrounded by a skin, whereas in other members of the family they are furnished with a covering; the wings are short and much rounded; the tail of moderate size, and graduated at its sides; the legs are strong, and the moderate-sized toes armed with very disproportionately powerful claws. The upper part of the plumage is reddish brown, lightest upon the brow and top of the head. The mantle-feathers are marked with blackish brown; the chin, throat, and front of the neck are light rust-red; the sides of the throat, cheeks, and region of the ear black, with white shafts to the feathers; the belly and centre of the breast are whitish yellow, the sides pale greenish brown, with dark markings. The length of this species is five inches, the wing measures two inches and one-sixth, and the tail one inch and one-third.

The Flute-player, as this bird is called by the Peruvians, on account of its strange and very beautiful voice, frequents the inmost recesses of the South American forests, where it lives in parties, and seeks for insects and berries either upon the ground or on such branches as are not more than two feet above its surface. During the middle of the day, according to Schomburghk, its song is rarely or never heard.

The PIPITS (*Anthi*) form, as it were, a connecting link between the Warblers and Larks, and until lately were classed among the latter birds. Their body is slender; their wings, in which the third and fourth quills are the longest, are of moderate size; the upper wing-covers often of great length; the tail of medium size; the tarsus slender; the toes weak; and the claws very large, the hindermost, like that of the Lark, being prolonged into a spur. The beak is thin, straight, narrow at its base, and awl-shaped, its margins turn inwards, and are incised at the slightly-curved tip of the upper mandible; the smooth, glossy plumage is of a brownish or greenish hue. The young usually resemble their parents. The family of Pipits comprises a great number of species distributed over all parts of the world, some occupying mountain tracts, and others forests, plains, or marshy districts. All live principally on the ground, and sometimes, but rarely, they perch on the branches of trees. Their manner of progressing on *terra firma* is rather by a rapid running step than by a series of leaps, and is accompanied by considerable agitation of the whole body, and constant gentle whisking of the tail. The flight of the Pipits is rapid, light, and undulatory, when they are desirous of going to any considerable distance, but changes to a hovering and fluttering motion when they rise into the air previous to singing. They are very intelligent, and their song, though simple, is agreeable; the call is a kind of piping sound, whence the name of Pipits, by which they are distinguished. Their principal food consists of beetles, moths, flies, snails, and aphides; some species also devour spiders and worms, and, according to recent observations, various kinds of seeds; all seek their food on the ground, and rarely seize their prey in the air, or by darting from the branches of trees or bushes. The nest is loosely formed of blades of grass, portions of plants and roots, lined with wool or hair, and is constructed on the ground. The eggs are of a dusky hue, and faintly marked with spots and streaks. The female alone broods, but both parents assist in tending the young. Most species lay more than once in the year.

THE MEADOW PIPIT, OR MEADOW TITLING.

The MEADOW PIPIT, or MEADOW TITLING (*Anthus pratensis*), is of a greenish brown, spotted with brownish black on the upper portion of the body; the breast is light rust-red, spotted with dark brown; the throat and belly are whitish, and a yellowish white streak passes over the eyes; the quills are brownish black, with light edges, and the feathers of the wing-covers bordered with dull green; the tail-feathers are brownish black, edged with olive-green, those at the exterior decorated with a large white spot at the tip. The eye is dark brown, the beak grey, and the foot reddish grey. This species is six inches long, and nine and a half broad; the wing measures two inches and five-sixths, and the tail two inches and a quarter. The female is a trifle smaller than her mate.

The Meadow Pipit is known to breed in all the northern half of the European continent, and is also met with in North-western Asia and North Africa. During the course of its journeyings in Egypt it usually settles near the coast among marshes, or near fields that are lying under water. In the British Isles it remains throughout the year, and is known in the lake district as the "Ling Bird," from the constancy with which it frequents the moors overgrown with heather or *ling* in that part of the country. Like the Larks it migrates in large flocks, and frequently in company with those birds, travelling day and night; it usually makes its appearance in this country about March, leaving again in November or December. Meadows, marsh-lands, or commons, afford the resorts it prefers, but it generally avoids arid or barren districts. The movements and habits of this species resemble those of other members of its family; it lives on excellent terms with birds of its own kind, but constantly exhibits a strong desire to annoy and irritate its other feathered companions.

"When progressing from place to place," says Mr. Yarrell, "the flight of this bird is performed by short unequal jerks, but when in attendance on its mate, and undisturbed, it rises with an equal vibratory motion, and sings some musical soft notes on the wing, sometimes while hovering over its nest, and returns to the ground after singing. Occasionally it may be seen to settle on a low bush, but is rarely observed sitting on a branch of a tree, or perched on a rail, which is the common habit of the Tree Pipit. The Meadow Pipit, when standing on a slight mound of earth, a clod, or a stone, frequently moves his tail up and down like a Wagtail."

The nest is placed on the ground, sometimes so much sunk as to be with difficulty perceived; sometimes sheltered by a tuft of grass. It is composed externally of stems and leaves of grass, lined with finer grass, fibres, and hair.

W. Thompson, Esq., in his valuable communications on the natural history of Ireland, says that "A friend at Cromac has frequently found the nest of the Meadow Pipit on the banks of watercourses and drains, as well as on the ground in fields. One which was known to him at the side of a drain was discovered by some bird-nesting boys, who pulled away the grass that concealed it. On visiting it the next day he observed a quantity of withered grass laid regularly across the nest; on removing this, which, from its contrast in colour with the surrounding grass, he considered must have been placed there by the boys, the bird flew off the nest, and, on his returning the following day, he found the grass similarly placed, and perceived a small aperture beneath it, by which the bird took its departure, thus indicating that the screen, which harmonised so ill with the surrounding verdure, had been brought thither by the bird itself. The same gentleman once introduced the egg of a Hedge Accentor into a Meadow Pipit's nest containing two of its own eggs, but, after a third egg was laid, the nest was 'abandoned.'" "This, however," observes Mr. Yarrell, "was probably induced by the visits of the observer rather than by the introduction of the strange egg, as the egg of the Cuckoo is more frequently deposited and hatched in the nest of the Meadow Pipit than in that of any other bird."

The eggs, four or five in number, have a dirty white or dull red shell, thickly strewn with brownish spots and streaks; they are generally hatched in thirteen days. The young leave the nest before they can fly, but conceal themselves with such adroitness at the first alarm of danger that they are rarely discovered. The first brood is produced in the beginning of May, and by the end of July the nestlings are capable of providing for themselves.

THE TREE PIPIT.

The Tree Pipit (*Anthus arboreus*) so closely resembles the species above described as very frequently to be mistaken for it. It is, however, distinguishable by its superior size, the comparative strength of its beak and tarsi, and the shortness of the much curved centre claw. The upper part of the body is yellowish brown, or dull brownish green, darkly spotted in stripes; the rump and under side are of one uniform tint; a stripe over the eyes, the throat, crop, sides of the breast, legs, and lower wing-covers, are pale reddish yellow; the crop, upper breast, and sides, being spotted with black. The stripes on the wings and edges of the shoulder-feathers are lighter than in the plumage of the Meadow Pipit. The eye is brown, the beak greyish black, and the foot reddish grey. The body is six inches and a half long, and ten and three-quarters broad; the wing measures three inches and a quarter, and the tail two inches and a half. The female is considerably smaller than her mate. During the summer the Tree Pipits frequent the woodland districts of Europe and Siberia, and in the winter wander southward as far as the African steppes and the Himalayas; they usually arrive in England about the third week in April. In many respects these birds resemble their congeners, but, unlike most of them, take up their quarters in well-wooded and cultivated localities, and at once seek shelter in trees at the approach of danger, and run along the branches with ease. They are also far less social in their habits, and, except in the autumn, while still occupied with their young, live alone, or associate but seldom with the other feathered denizens of their favourite woods and groves. The song of the Tree Pipit far exceeds in its quality that of most other species; indeed, some of its loud, clear tones will bear comparison with those of the Canary. The male sings almost incessantly from sunrise to sunset, until the end of June, and pours out his lay from the point of some projecting branch, from whence he rises into the air, and after hovering for a short time slowly descends and finishes his song upon the perch he had just left. The nest is placed in a hollow in the ground, or carefully concealed in grass and clumps of plants; it is very clumsily built, only the interior being arranged with anything like neatness or care. The four or five eggs vary considerably both in form and colour, the tints being either reddish, greyish, or blueish white, spotted, mottled, or streaked with a darker shade. The female sits with such devotion that she often will not quit her eggs unless driven from the spot. The young are most tenderly reared by the exertions of both parents, and quit the nest before they are able to fly.

THE TREE PIPIT (*Anthus arboreus*).

"The Tree Pipit," says Mr. Yarrell, "is a summer visitor to this country, arriving about the third week in April, and frequents the enclosed and wooded districts of England. It is not uncommon around London, and I have observed it frequently in the highly-cultivated and wooded parts of Kent. The male has a pretty song, perhaps more attractive from the manner in which it is given than the quality of the song itself. He generally sings while perched on the top of a bush, or one of the upper branches of an elm-tree, standing in a hedgerow, from which, if watched for a short time, he will be seen to ascend on quivering wing about as high again as the tree, then, stretching out his wings and expanding his tail, he descends slowly by a half-circle, singing the whole time, to the branch from which he started, or the top of the nearest other tree; and, so constant is this habit with him, that if the observer does not approach too near to alarm him, the bird may be seen to perform this same evolution twenty times in half an hour, and I have witnessed it most frequently during and after a warm May shower." "The Tree Pipit," continues Mr. Yarrell, "is found in all the wooded and cultivated districts of the southern counties of England, but is seldom met with in open unenclosed country. It is comparatively rare in Cornwall; not very numerous in either North or South Wales: and some doubts are still entertained whether it extends its range to Ireland."

THE ROCK PIPIT (*Anthus petrosus*).

In a communication from Mr. Weir (who observed the birds in East Lothian) to Mr. Macgillivray, he says:—"The Tree Pipits generally make their appearance here about the beginning of May, and frequent the woods. They perch upon the highest branches of a tree, from which they ascend into the air, uttering a twittering note at each extension of the wings. They send forth their song during their descent, which they perform with wings extended and tail erected, till they again reach the tree, where they continue a short time after perching, and then descend to the ground in the same manner. They generally build their nests in plantations, at the root of a tree, and amongst long grass. It is very difficult to discover them, as they are so cunningly concealed, and as the birds generally run several yards from them before they mount into the air. The nest in which I caught the old ones being in a park grazed by cattle, and very near a plantation, afforded me an excellent opportunity of observing their motions. When they fed their young ones, which they did with flies, caterpillars, and worms, they always alighted at the distance of twenty or thirty feet from their nests, cowering, and making zig-zag windings, and now and then putting up their heads and looking around them with the greatest anxiety and circumspection. They are seldom met with in my neighbourhood; and, in the long space of fourteen years, I have seen only two or three of their nests."

"The Indian Tree Pipit," says Jerdon, "is very similar to its European congener, but appears to differ slightly. It is found over all India in the cold season, for it is a winter visitant, only coming early in October and departing about the end of April. It frequents gardens, groves, thin tree jungle, also occasionally grain-fields, beds of woody streams, &c. It is social in its habits, many birds being generally found together. It usually feeds on the ground on various insects, and also on seeds, but, on being disturbed, flies up at once to the nearest tree. It now and then feeds on trees, hopping about the upper branches, and occasionally snapping at an insect on the wing. It is said by the natives to kill many mosquitoes, hence many of its native names. Mr. Blyth says he has seen small parties of these birds flying over their haunts, in a restless unsettled way, now and then alighting on a tree, uttering a slight chirp, and continuing this till nearly dark. The flesh of this species is used by falconers as a restorative to the Bhagri, and is said to be very delicate. It is taken in numbers for the table in Bengal and elsewhere, and sold as Ortolan."

THE ROCK PIPIT.

The Rock Pipit, Shore Pipit, or Sea Titling (*Anthus petrosus*, or *aquaticus*), is deep olive-grey, spotted faintly with blackish grey on the back and greyish white upon the lower portion of the body, the sides of the breast being spotted with dark olive-brown; a light grey streak passes over the eyes, and the wing is enlivened by the light grey borders; the eye is dark brown. This species is from six inches and three-quarters to seven inches long, and from eleven and a quarter to eleven and a half broad; the wing measures three inches and a half, and the tail two and three-quarters. The claw of the hinder toe is long and very much curved. Unlike their congeners, the Rock Pipits inhabit mountain ranges, and only descend upon the plains during their migrations. In the Swiss Alps they are exceedingly common birds. "In spring," says Tschudi, "this species appears upon such parts of the mountains as are free from snow, and in summer large flocks seek safety from the violent storms that frequently break over the Alps in more sheltered situations. As winter approaches, and the cold becomes more severe, they venture down into the plains beneath, and occupy marsh-land and the neighbourhood of lakes or streams." In Great Britain they remain upon the coast throughout the year, and are seldom seen at any great distance from the sea; how far north they wander seems uncertain, for it is at present undecided whether the Shore Pipit (*Anthus rupestris*), a bird found throughout the whole of Scandinavia, is the same, or merely a nearly allied species. During the breeding season the Rock Pipits entirely lay aside the timidity they exhibit at other times, and boldly approach any intruder on their privacy, flapping their wings as they fly about him, and uttering loud and anxious cries. Their pleasing song, which is heard about the end of July, is poured out with great rapidity, as they rise quickly into the air; and after hovering for a time, with a gentle swimming motion, slowly descend, with wings outspread, to the spot from which they rose. They very rarely sing when perching on the rocks or bushes. The nest is far less carefully concealed than that of other Pipits, and is generally placed in a crevice, hole, or under a tree-root so situated as to afford an overhanging shelter to the little family. The eggs, from four to seven in number, have a dirty white shell, very thickly marked with various shades of brown and grey; they bear a considerable resemblance to those of the Common House Sparrow. Tschudi tells us that on the Alps it is not uncommon for both parents and young to perish in the heavy snow that often falls in spring.

"Though called the Rock Pipit," observes Mr. Yarrell, "it inhabits as well low, flat shores in the vicinity of the sea, and the neighbouring salt marshes, where it feeds on marine insects, sometimes seeking its food close to the edge of the retiring tide. I have seen these birds very busily engaged in the examination of sea-weed, apparently in search of the smaller crustacea. This species is readily distinguished from the Tree and Meadow Pipit by its larger size. The hind claw is long and very considerably curved. The localities frequented by the Rock Pipit are, however, strikingly distinguished from those in which the other Pipits are so constantly found. I do not remember to have seen the Rock Pipit except within a short distance of the sea-shore; and so generally is it there distributed, that I never remember looking for it, when visiting any part of our sea-coast, without finding it. It does not wander far inland, and is very seldom seen at any considerable distance from the sea. It remains in this country on the coast throughout the year."

"The Rock Pipit," Mr. Lloyd tells us, "is exceedingly common on the whole coast of Scandinavia, from Scania to North Cape. Every rocky islet, indeed," he continues, "is occupied by a pair or two of these birds, but I do not remember having seen them in the interior of the country.

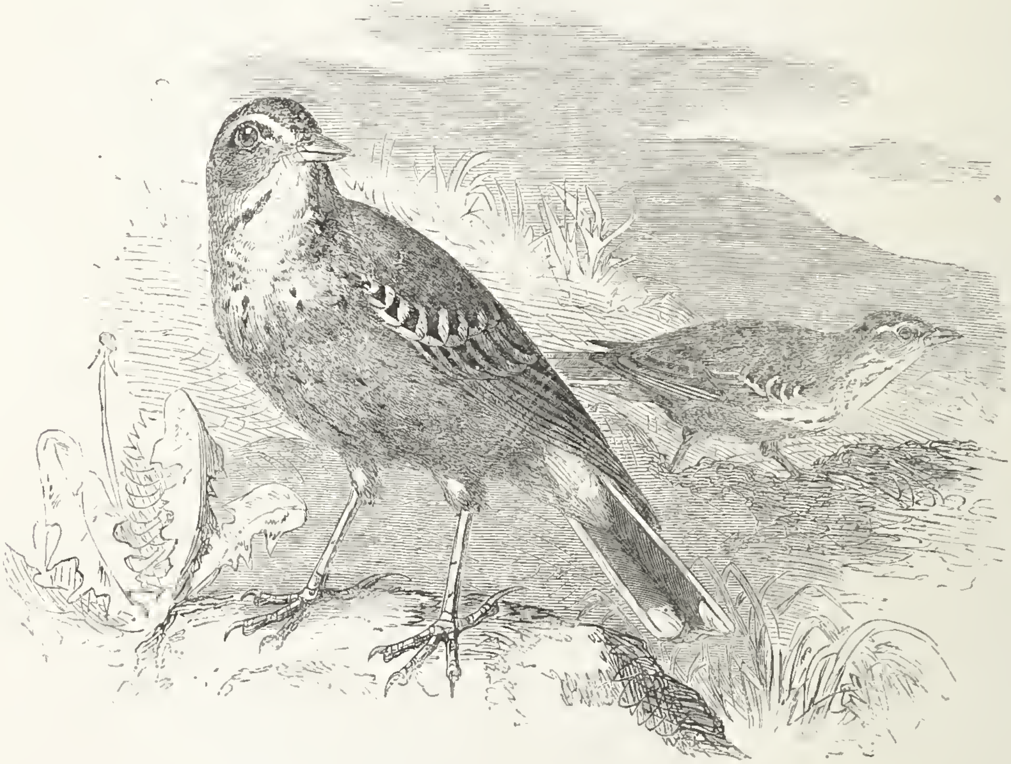
"The fishermen in the province of Blekinge look upon the Rock Pipit as a very useful bird, for the reason that when the water is low it repairs to the bare rocks, and feeds on the *grund märla*, a little shrimp or crustacean, which is so injurious to their nets that, during a long autumnal night, it will destroy them altogether.

"The female forms her nest on grass-grown ledges of rocks, but, though in appearance pretty substantial, it is so fragile that it falls to pieces at the least handling. She lays from four to five eggs of a greyish brown or greenish brown colour, marked with ash-brown spots, and usually hatches at the beginning of May."

THE STONE PIPIT, OR FALLOW-LAND PIPIT.

The Stone Pipit, or Fallow-land Pipit (*Agrodroma campestris*), the largest member of this family, represents a group of slenderer form, and having a stronger beak and foot than those above described. The length of this species is from six inches and three-quarters to seven inches, its breadth ten inches and a half to ten inches and three-quarters; the wing measures three inches and a quarter, and the tail two inches and five-sixths. The upper parts of the body are pale yellowish grey, sparsely marked with clearly-defined dark spots; the under side is dirty yellowish white; the feathers over the erop have dark streaks on the shafts; a light yellow line passes over the eye; and the wings are decorated with yellowish white stripes. The young are darker, and their feathers edged with yellow. The region of the crop is also much spotted.

The Fallow-land Pipit frequents unfruitful, arid, or stony localities, such as are avoided by other members of the family, and is far more numerous in the southern countries of Europe than in the northern parts of our continent. Bolle tells us that it inhabits the hottest and most barren districts of the Canaries in very large numbers, and in the Balearic Isles it is one of the commonest birds; we have ourselves met with it during the winter in all parts of North-eastern Africa and in Soudan. Jerdon also mentions it as frequenting some parts of India. It is a remarkable fact that though this species is so numerous in the Balearic Isles, it is comparatively rarely seen in Spain, except during its migrations. In most parts of Europe it usually arrives in April and leaves for warmer regions at the end of August; in fine weather the flocks journey by day, but if the season be unfavourable they pursue their course principally during the night. In its movements and habits the Fallow-land Pipit much resembles both the Larks and Wagtails. It runs upon the ground with extraordinary rapidity, usually preferring the furrows of ploughed fields or dry ditches, when in search of food, and frequently pauses in its labours to perch upon a stone or clod, and survey surrounding objects; while thus quietly resting, the body is held erect and the tail lowered, but when the bird is excited, the tail is agitated after the manner of a Wagtail. When in flight the wings rapidly open and close, the undulatory course thus produced being diversified by a slow hovering motion, or by a direct descent towards the earth, with pinions completely closed. Such of these birds as inhabit Europe are extremely shy, but those occupying the Canary and Balearic Isles boldly approach the houses, and evidently prefer to be in the immediate neighbourhood of man. The song of the Fallow-land Pipits is extremely simple and monotonous. During the breeding season each pair takes possession of a certain spot, from whence they drive off every intruder, and the male at once commences a series of vocal exercises for the entertainment of his mate; these he carols forth as he soars in the air. The nest, which consists of moss, earth, and dry leaves, lined with softer materials, is built upon the ground. The first eggs are laid about the end of May, and in July the nestlings are fully fledged.



THE FALLOW-LAND PIPIT (*Agrodroma campestris*).

"The Stone Pipit (*Agrodroma campestris*)," says Jerdon, "is found in suitable places in India. I have found it most abundant in the Deccan, at Mhoa, in Central India, and on the Eastern

Ghauts; it is rare in the Carnatic. Blyth has it from Midnapore and the North-western Provinces. It frequents barren, open, stony land, and is never found in rich pastures. It breeds in this country (India). In Palestine it is recorded as frequenting the lower plains and hills."

WREN AND WAGTAILS.

The SPURRED PIPITS (*Corydalla*) are recognisable by their large size, pointed wing (in which the three first quills are of equal length), their long tail, incised at its extremity, and high slender foot, the hinder toe of which is furnished with a claw of great length.

RICHARD'S SPURRED PIPIT.

Richard's Spurred Pipit (*Corydalla Richardii*).—The mantle of this species is of a dull brown, each feather having a light edge; the region of the cheeks, a stripe over the eye, and the entire under side are yellowish white, shaded with grey upon the breast; the sides of the throat are white, decorated with oval, dark brown spots; the centre quills are greyish brown, broadly shaded with light reddish grey on the inner web; the outer web of the first quill is almost white, the rest shade gradually into reddish yellow; the middle tail-feathers are brownish black, the others, like those of the wing, become gradually lighter, the outer feathers being nearly entirely white. The summer plumage is deeper in tint, and the edgings to the feathers more clearly defined than at other seasons. The eye is brown, the upper mandible dark brown, the lower one yellow towards its base; the feet are yellowish brown. This bird is from seven inches and a half to eight inches long, and twelve inches and a half broad; the wing measures three inches and four-fifths, and the tail three inches and a quarter.

The Spurred Pipits frequent Great Britain, Spain, France, Italy, Austria, Greece, and Sardinia, but are never seen in large numbers; they are also occasionally found in Heligoland; and Jerdon informs us that during the winter they are met with in the Himalayas, Bengal, Nepaul, Ceylon, Burmah, and other parts of India; at the latter season, according to Swinhoe, they are also numerous in Central China. We ourselves have never succeeded in finding the true Corydalla in either Spain or Africa. Marshes, boggy districts, and the grassy margins of ponds or streams, are the localities to which they resort. Jerdon tells us that they particularly frequent rice-fields, always associating in small parties. Their flight is light, graceful, and undulating. The nest, which is very flat, and placed in a hollow or hole in the ground, is formed of stalks woven together with fibres. The eggs, usually laid about May, are oval, glossy, and of a delicate blueish white, spotted with blueish grey, yellowish brown, or dark brown, and occasionally spotted and streaked with brownish grey; they much resemble those of the Meadow or Rock Pipit. We learn from Jerdon that a large number of these birds are sold in the markets of Calcutta, and passed off as Ortolans.

This species was first found in England by N. Vigors, Esq., in 1812, since which time a few other specimens have been seen in different parts of the island. According to Yarrell, " The habits of the Spurred Pipit—as far as the peculiarities of so rare a bird can be known, for it is equally scarce on the Continent—are said to be very similar to those of other Pipits. It is mostly observed on the ground, frequenting old pastures, where it stands very high and runs with facility, waving the tail up and down, with a gentle airy motion, like that observed in the Wagtails, while its long hind claw, but slightly curved, connects it with the Larks; it has, like them, an agreeable song."

The WAGTAILS (*Motacillæ*) are readily distinguished from the Pipits by the comparative slenderness of their shape; their legs are high and thin, the wings of medium size, the third quill longer than the rest, and the secondaries scarcely longer than the primaries; the tail is very long, composed of narrow feathers, and often forked at its extremity. The beak is slender, straight, and awl-shaped, with a ridge at its culmen, and slightly incised at its tip. The plumage is much variegated, differs somewhat according to the sexes, and is twice moulted.

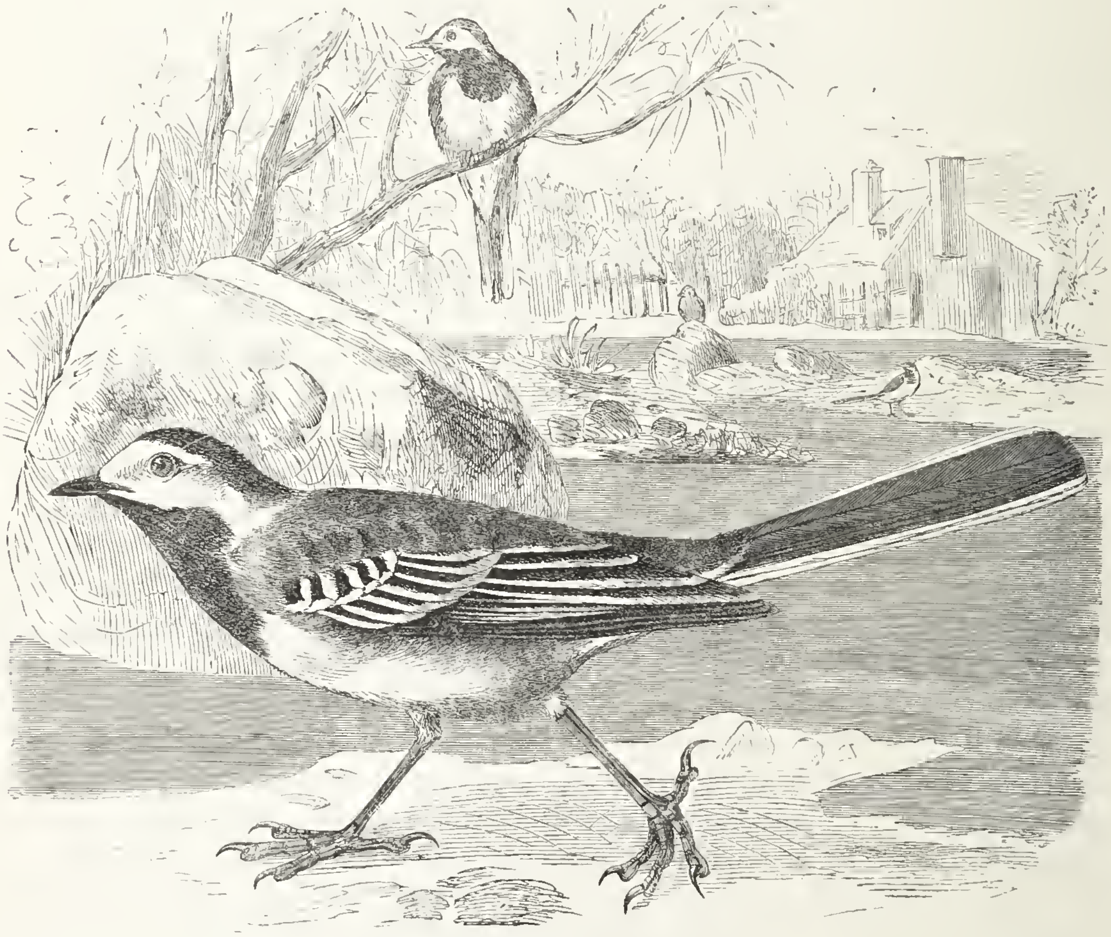
The various members of this family inhabit the eastern hemisphere, and within its limits are met with in every latitude; most species prefer the immediate vicinity of water, but some few often seek their food in comparatively arid situations, returning, however, within a few hours to their usual haunts. The movements of the Wagtails are characterised by considerable liveliness and grace, they are neither so hurried nor so rapid as those of the Pipits. Upon the ground they generally walk with a thoughtful, deliberate bearing, bowing the head at each step, and agitating the tail so incessantly as to entitle them to the name by which they are commonly known. Their flight is light and undulatory, being produced by a rapid opening and closing of the wings, and their song, though by no means powerful, is simple and pleasing. Flies, beetles, and larvæ of all kinds afford them their principal means of subsistence; these they not only seek upon the ground, but pursue them to a considerable distance through the air. The northern species migrate as far as Central Africa and India; others only wander somewhat farther south, but few remain throughout the entire year in their native land. The nest, which is carelessly formed of twigs, roots, straw, grass, moss, and dry leaves, is lined internally with wool, or some similar material, and is constructed in holes or hollows in the vicinity of water; if no stream or pond is at hand, a mere pool will often satisfy the requirements of the building pairs. The eggs have a thin, finely-spotted, light grey shell. The nestlings, when first fledged, entirely differ from the parents in their appearance.

Most species of Wagtail exhibit a decided predilection for the immediate neighbourhood of man, whose favour they almost invariably obtain by their confiding and lively disposition.

THE WHITE WAGTAIL.

The White Wagtail (*Motacilla alba*) is grey upon the mantle, the nape is of velvety blackness, the throat and upper part of breast are also black, the rest of the under side brown, while the bridles, cheeks, and sides of the throat are white; the quills are black, edged with whitish grey; the centre tail-feathers are black, the rest white. The female resembles her mate, but the black patch upon her throat is of smaller size. After the moulting season both sexes have a white patch upon the throat, surrounded by a horseshoe-shaped black line. The young are of a dull grey above, and grey or dirty white beneath, with the exception of a dark line on the throat. The eyes of all are deep brown, the beak and feet black. This species is seven inches and a half long, and ten inches and two-thirds broad; the wing measures three inches and a quarter and the tail three inches and three-quarters.

The White Wagtail is found in every part of Europe; in Africa as far as eleven degrees north latitude; and in Asia as far south as Aden; it appears in Europe about March, and leaves again in October or December. Like other members of its family this species frequents the neighbourhood of water, and lives in a state of continual restlessness; even when the bird is not running to and fro, the tail is constantly agitated. Its movements closely resemble those of other Wagtails, and its song is agreeable but very simple. Although social as regards their own kind, these birds always exhibit a most pugnacious and daring disposition towards the rest of their feathered companions, whatever their size or powers; indeed, so entirely are they free from any timidity, or sense of inferiority, that they often combine in parties, and pursue really large birds of prey, meanwhile uttering such loud cries as warn the whole neighbourhood of the impending danger; the enemy having been routed the party separate, after noisily expressing their pleasure at the feat they have accomplished. Insects and larvæ afford them their principal means of subsistence; it is not uncommon to see these bold birds seize their prey from under the very feet of the cattle as they graze, or follow the footsteps of the ploughman as he turns up the earth. The pairing season is inaugurated by desperate battles between the rival males, who confront each other upon the ground and fight till one or the other is compelled to quit the field. No sooner has the victor obtained undisputed possession of his prize, than his whole demeanour changes, and he becomes as tender and gentle as he was before fierce and quarrelsome. Each couple takes possession of a particular spot, and within its limits make their nest, placing it indifferently in the most diverse situations. The little structure is formed of twigs, roots, and grass, hay, leaves, and a great variety of similar materials, and lined with wool, hair, or other equally elastic substances. The first brood is laid in April, and consists of from six to eight eggs of a grey or blueish white hue, thickly spotted and streaked with grey; the second batch of eggs is produced in June. The female alone broods, but both parents assist in the business of feeding the hungry nestlings, who grow with great rapidity, and are soon able to take care of themselves. In the autumn young and old again assemble, and pass the night in reed-covered marshy localities, in company with Swallows and Starlings; as the season advances these parties increase to large flocks, which during the day fly from one ploughed field or pasture to another, always keeping in a direct course towards their winter quarters, and, when night has set in, they rise together into the air, and amid loud outcries, start forth upon their long and wearisome pilgrimage.



THE WHITE WAGTAIL (*Motacilla alba*).

"The belief expressed in the first part of this work," says Mr. Yarrell, in his third edition of his valuable work on British Birds, "that this species is the true *Motacilla alba* of Linnæus, has been verified in several instances; the coloured figures and descriptions of Swedish and other Continental authors leave us no room to doubt, and when the subject has been further investigated, it will probably be found that the present species is the real *Motacilla alba*, and therefore called the White Wagtail. It is only a summer visitor to Britain, while many of the better known Pied Wagtails remain with us all the year."

In the south of Sweden, where this Wagtail appears about the time the ice is breaking up, it is called "Is Spjärna"—literally, the "kicker away of the ice." In some places it goes also by the name of the "Kök Ärla," or the "Clod Wagtail," because it is so constantly seen amongst the clods in the newly-ploughed fields. There is, moreover, a saying in parts of Sweden, that if the farmer commences ploughing either before the coming or after the departure of the White Wagtail, success will not attend his labours.

THE PIED WAGTAIL.

The PIED WAGTAIL (*Motacilla Yarrelli*) was formerly supposed to be identical with the bird just described. Mr. Gould, who first decided that the two species were quite distinct, thus discriminates between them, in a communication to the *Magazine of Natural History*:—"The Pied Wagtail of England is somewhat more robust in form than the true *Motacilla alba*, and in its summer dress has the whole of the head, chest, and back of a full, deep jet-black; while in the White Wagtail (*Motacilla alba*), at the same period, the throat and part of the head alone are of this colour, the back and the rest of the upper surface being of a light ash-grey. In winter the two species more nearly assimilate in their colouring; and this circumstance has doubtless been the cause of their being hitherto considered identical, the black back of *Motacilla Yarrelli* being grey at this season, although never so light as in *Motacilla alba*. An additional evidence of their being distinct (but which has doubtless contributed to the confusion) is, that the female of our Pied Wagtail never has the back black, as in the male; this part, even in summer, being dark grey, in which respect it closely resembles the other species."

"The Pied Wagtail of this country," says Mr. Yarrell, "though a very common bird, is deservedly admired for the elegance of its form, as well as for the activity and airy lightness exhibited in all its actions. It is ever in motion, running with facility by a rapid succession of steps in pursuit of its insect food, moving from place to place by short undulating flights, uttering a cheerful chirping note while on the wing, alighting again on the ground with a sylph-like buoyancy and a graceful fanning motion of the tail, from which it derives its name. It frequents the vicinity of ponds and streams, moist pastures, and the grass-plots of pleasure-grounds; may be frequently seen wading in shallow water seeking for various aquatic insects or their larvæ; and a portion of a letter sent me lately by William Rayner, Esq., of Uxbridge, who keeps a variety of birds in a large aviary near his parlour window for the pleasure of observing their habits, seems to prove that partiality to other prey besides aquatic insects, has some influence in the constant visits of Wagtails to water. "I had," says that gentleman, "during the year 1837, several Wagtails, the pied and yellow, both of which were very expert in catching and feeding on minnows which were in a fountain in the centre of the aviary. These birds hover over the water, and, as they skim the surface, catch the minnow as it approaches the top of the water in the most dexterous manner; and I was much surprised at the wariness and cunning of some Blackbirds and Thrushes in watching the Wagtails catch the minnows, and immediately seizing the prize for their own dinner."

The nest of our Pied Wagtail is formed of moss, dead grass, and fibrous roots, lined with hair and a few feathers. It is sometimes placed on the bare ground on a ditch bank, sometimes in a hole of a wall, or thatch of an outbuilding, and it is frequently fixed in the side of a wood-stack or hay-rick; occasionally it has been found occupying a cavity in a peat-stack or a wall of turf sod, but always in the vicinity of water. The eggs are four or five in number, white, speckled with ash-colour, nine lines in length and seven lines in breadth.

Mr. Jesse, in his "Gleanings in Natural History," records an instance of a Water Wagtail building her nest in one of the workshops of a manufactory at Taunton:—"The room was occupied by braziers, and the noise produced by them was loud and incessant. The nest was built near the wheel of a lathe, which revolved within a foot of it. In this strange situation the bird hatched four young ones; but the male not having accustomed himself to such company, instead of feeding the nestlings himself, as is usual, carried such food as he collected to a certain spot on the roof, from whence it was borne by his mate to the young. It is still more remarkable that she was perfectly familiar with the men into whose shop she had intruded, and flew in and out of it without fear. If, by chance, a stranger or any other of the persons employed in the same factory entered the room, she would, if in her nest, instantly quit it, or, if absent, would not return; the moment, however, that they were gone she resumed her familiarity."

THE DHOBIN.

The DHOBIN (*Motacilla Dukhunensis*) is the Indian representative of the species just described. During the summer this bird is pale grey on the back and scapulars, a supercilian streak, the nape, wings, centre feathers of the tail, the throat, and breast, are black; the eyebrows, a spot on the wings, the exterior tail-feathers, and belly are white, and the secondary quills are dark grey, bordered with white. In the winter the chin, throat, and region of the eye, are white, and only a small black spot is visible on the breast; the top of the head and nape are then grey. The eye is brown, and the beak and feet black. The length of this species is from seven inches and a half to eight inches; the wing measures three inches and five-eighths; and the tail four inches and three-quarters.

The Dhobin is met with throughout the whole of Ceylon and Southern and Central India, and is very common in the Deccan; it usually makes its appearance in October, and remains till March or April. It is at present unknown where this species breeds; and we have but little information respecting its habits, except that it lives in close proximity to houses, frequently entering within doors to seize the flies as they skim about the rooms; during the day it remains solitary, but in the evening goes with its companions to the margin of some stream or other piece of water, there to pass the night.

This bird closely resembles the *Motacilla alba* of Europe, but is distinguished by its great ear patch, and by the blackness of the ear-feathers, and of the neck all round. "This Wagtail," says Jerdon, "is found throughout Southern and Central India, extending into the North-western Provinces, Sindh, the Punjaub, and Affghanistan. Adams, however, says that he did not see it in Peshawur, and that the former species is the Common Wagtail of Cashmere. It is also found in Ceylon. It is not very abundant in the extreme south of the peninsula, but is very common in the Deccan and in Central India, coming in about the middle of October and leaving in March or April. It is a very familiar bird, feeding close to houses, stables, and in gardens; often, indeed, entering verandahs, and coming into an open room if not disturbed. It runs about briskly after small insects, and is very active in catching the flies that infest the vicinity of stables and outhouses. A small party of these birds may often be seen towards evening on the bank of a river or tank, though, when feeding, they are usually solitary."

THE ROCK WAGTAIL.

The ROCK WAGTAIL (*Motacilla Lichtensteinii*) inhabits the valley of the Nile, and frequents such parts of that river as are traversed by rocks or huge masses of stone. Its plumage is simple but striking in its coloration; the entire mantle, sides of throat, and breast, are of a rich deep black; a stripe over the eyes, a patch on the throat, a spot on the wing-covers, the exterior tail-feathers, and under side are white; the eye is brown; the beak and feet black. In its movements this species closely resembles those of its family already described, but is distinguished from them by its habit of frequenting such portions of rock or stone as are entirely surrounded by water; in Nubia it is very common, but is rarely met with in any but the most stony districts. According to our own experience the Rock Wagtail lives in pairs, each couple keeping within the limits of its own domain, and violently resenting any attempt at intrusion. Like the rest of their brethren these birds are extremely quarrelsome, and live in a state of constant warfare with such of the northern species as take up their winter quarters in their vicinity. The nests which we found were always situated in holes or clefts in the rocks.

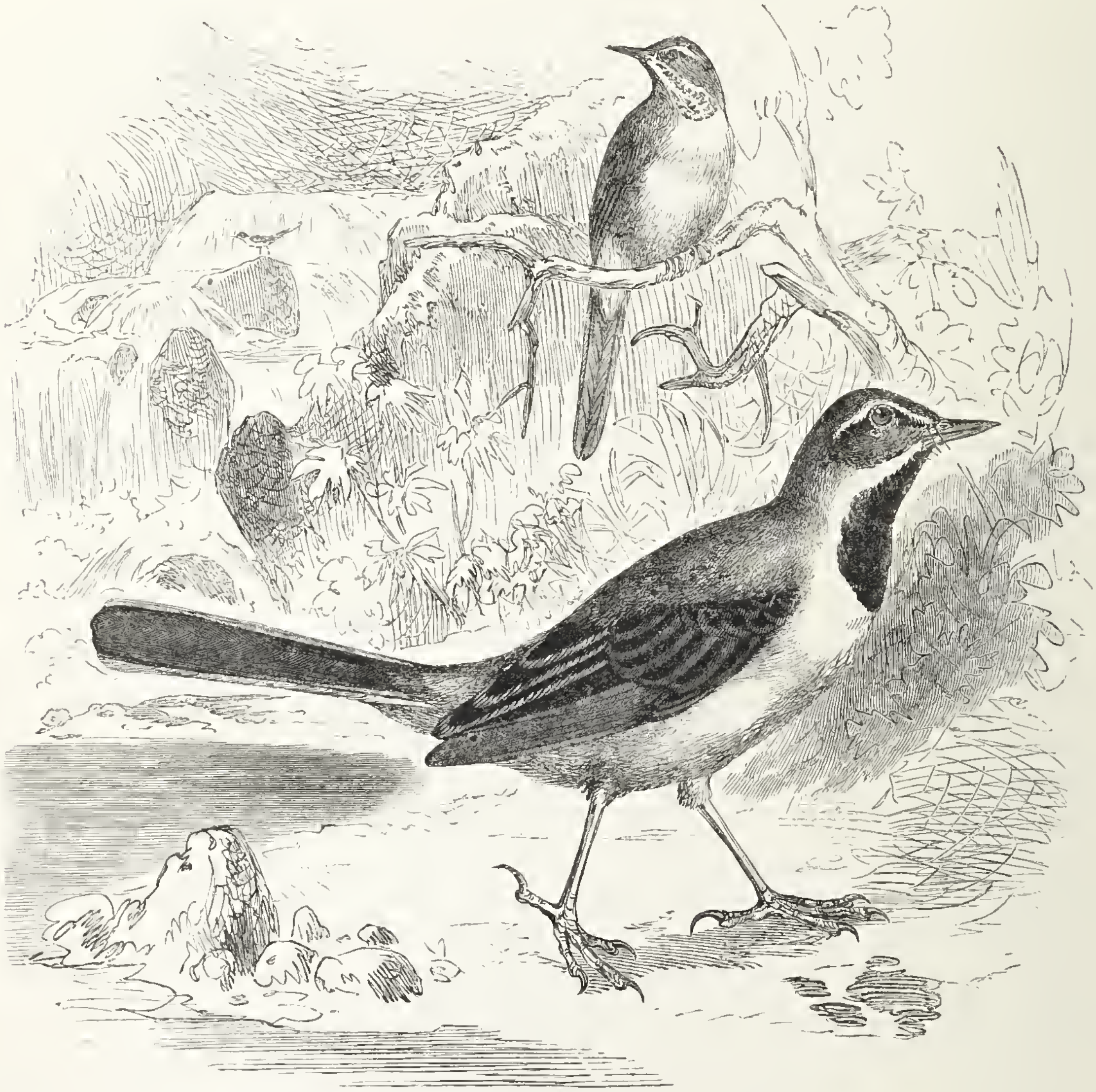
THE MOUNTAIN WAGTAIL.

The MOUNTAIN WAGTAIL (*Calobates sulphurea*) represents a group of Wagtails recognisable by their comparatively short wings, long tail, and delicate beak; the sexes also differ in the coloration of their plumage. During the spring the male is deep grey upon the back and sulphur-yellow on the under side; the black throat is divided from the grey back by a white line, a similar streak passes above the eyes, and the wing is enlivened by two light grey stripes; when quite old the females resemble their mates, but the yellow under side is of a paler hue, and the black on the throat less pale; when young, the females have only a white or dingy grey spot on the throat. The young of both sexes are of a dull ash-grey above and yellowish grey beneath, the throat is greyish black, spotted with blackish grey; the eye is dark brown, the beak black, and the foot horn-grey. This species is seven inches and two-thirds in length, and its breadth is nine inches and three-quarters; the wing measures three inches and a quarter, and the tail four inches.

The Mountain Wagtail occupies not only European mountains, but those of Asia and Africa. It is comparatively rare in Northern Europe, but is numerously met with about the lofty peaks of its southern portions. The great extent of country over which this species is found is the more remarkable, because even such Mountain Wagtails as inhabit Central Europe either remain throughout the year in their native haunts, or merely wander for a comparatively short distance in a southerly direction. Bolle tells us that they are commonly seen in the Canary Islands; and Jerdon informs us that they appear in India in September, leaving again about the first week in May; this latter statement is worthy of notice from the fact that such as quit Europe at the approach of autumn do not leave us earlier than September, and return before May. The localities to which these birds usually resort are in the vicinity of mountain streamlets and lakes, but they are also frequently seen about meadows or upon house-tops, and in some countries evidently prefer the society of man. Their flight is light, rapid, and often long sustained; they move upon the ground with the utmost ease, turning their bodies about as they run, much after the fashion of an animated dancer. The tail is held slightly raised, in order to prevent it from getting wet, and great care is taken to prevent any part of the plumage from being soiled. So entirely are they without fear of man, that they not only freely venture close to his dwellings, but permit a friendly stranger to approach near to them, without quitting the spot on which they are perched. If, however, they feel that they are pursued, they at once become so timid as to render their capture extremely difficult. Their voice is deceptively like that of the White Wagtail. Two broods are produced within the year, the first in April, the second in July. During the whole period of incubation the demeanour of the male is very restless; he flutters hither and thither, flapping with his wings, and perches from time to time upon certain chosen spots, in order to pour out his song of rejoicing; at this season his vocal performance possesses unusual sweetness. The nest is placed near the water in holes under roots of trees, or amongst stones; it varies considerably both as to size and the care with which it is constructed; the outer wall is generally formed of roots, leaves, grass, or moss; upon this is arranged a second layer of somewhat finer materials, and the interior is neatly lined with hair, wool, or vegetable fibres. The eggs, from four to six in number, are of a dark grey or blueish white, veined and spotted with yellow or dark grey. The female usually broods, and exhibits such devotion to her progeny, that, when sitting, force must be employed to remove her from the nest. The young are very carefully nurtured.

This species is spread throughout all India and Ceylon; it is very generally met with in the hilly and wooded parts, but is rare in the open country, especially towards the south of India, the Carnatic, and the bare table-land; it is apparently most abundant in Bengal and the more northern districts.

"It occasionally," says Jerdon, "is to be seen on the banks of rivers, but is more generally found in gardens near houses, in towns and villages, and on walks in the forest, or where there is sufficient shelter. Mr. Blyth, who had abundant opportunities for observing it, says he has seen it tripping over the filthiest narrow black drains between hut and hut in the native town of Calcutta. It occasionally, though rarely, perches upon trees, and has the jerking motion of its tail more remarkably noticeable than any other member of the entire group, for it appears unable to keep it in repose even for a moment."



THE MOUNTAIN WAGTAIL (*Calobates sulphurea*).

The SHEEP WAGTAILS (*Budytes*), a group of European birds, are recognisable from the other members of their family by their short tail, the straight long nail on the hinder toe, and the brilliancy of the plumage, which varies in the two sexes, insomuch that naturalists are undecided as to whether certain species of these Wagtails are distinct or identical.

THE COW OR MEADOW WAGTAIL.

The Cow or Meadow Wagtail (*Budytes flavus*) is blueish grey upon the head and nape, the back is olive-green, and under side bright yellow, the quills and tail are of a blackish hue, with light borders; a pale stripe passes above the eyes, and two yellow lines across the wings; in the female and young all the colours are fainter and greyer than in the male bird. The eye of all is dark brown, the beak black, the base of the lower mandible light blue, and the foot black.

The Meadow Wagtail is generally found in the central and northern parts of Europe; it frequents meadows and the banks of small streams, and feeds principally upon flies and aquatic insects. The nest is built in holes in meadow ground, or at the foot of trees; the eggs are six in number, with light flesh-coloured blotches. Gould supposes these birds, although not visiting England, to be numerous on the Continent. He received one that he tells us was shot in the neighbourhood of Paris, and in May specimens were killed in Sweden by N. C. Strickland, Esq. From the account of this gentleman, their manners are very different from those of our Yellow Wagtail, as they run about with the tail elevated, and the wings hanging down and spread. We have also received the bird from the Himalaya Mountains. The first British specimen was shot near Colchester by Mr. Henry Doubleday, who was attracted by observing a pair of birds together, long after the time that our Common Yellow Wagtail leaves the country. In 1836 two were seen near Edinburgh, and others have since been seen at intervals in different parts of England.

RAY'S WAGTAIL.

Ray's Wagtail (*Motacilla* or *Budytes Rayi*)—the Yellow Wagtail, formerly called *Motacilla flava*—so well known as a summer visitant to England, is very rare on the continent of Europe, where the preceding species, called by Continental authors *Motacilla flava*, is found. Mr. Gould was the first to point out the difference between the two, and to assign to the British species the name of Ray's Wagtail, in memory of the distinguished naturalist by whom it was first observed.

"In Ray's Wagtail," says Yarrell, "the line over the eyes and ear-covers is yellow, and the back of the head is, I believe, invariably the same as the back of the bird; while, in the Grey-headed Wagtail, or Continental species, the white elongated line over the eyes and ear-covers appears to be permanent, and the grey head is more or less conspicuous at all seasons, particularly in summer. The females of the two species most resemble each other.

The Yellow Wagtail (*B. Rayi*) comes to us from the south, appearing at the end of March or beginning of April, and leaving us in September. It frequents ploughed fields and uncultivated ground covered with furze; it makes its nest both in arable land and fields of wheat and tares, and does not appear so partial to water as other species. "It frequents," says Mr. Yarrell, "dry fallows and fields of young corn, where, perched upon a clod or stone, it exhibits its rich yellow breast to great advantage." The nest, which is placed upon the ground, is formed of dry stalks and fibres, and lined with hair. The eggs, from four to six in number, somewhat resemble those of the Sedge Warbler; they are of a whitish hue, mottled with various shades of brown. The young begin to fly about the end of May, and from that time till the season for migration, may be seen following their parents in search of food, keeping so close to the feet of cattle and sheep as to be in constant danger. A writer quoted by Mr. Yarrell says, "I have seen whole parties of Yellow Wagtails running and dodging close to the cows' heads, apparently catching small insects. I suppose the cattle disturbed the flies which are the favourite food of this bird, and lodge in the grass, and which, as they arose, were caught by the watchful Wagtail, before they could secure their retreat. The call-note of this bird resembles that of other species, although more shrill than that of the White

Wagtail; it consists of two notes, repeated in succession, the second of which is one whole tone lower than the other."

THE VELVET-HEADED OR SHEEP WAGTAIL.

The VELVET-HEADED or SHEEP WAGTAIL (*Budytes melanocephalus*) is of a rich black upon the brow, top of the head, and region of the eye; the entire mantle is olive-colour, shaded with green; the under side is bright sulphur-yellow; the wings and centre tail-feathers are black, with light edges; and the wing-covers brownish black, bordered with white. The female is of an olive-green above and pale greyish yellow on the under side; the region of the ear is black. A remarkable variety inhabiting Great Britain is yellowish green on the top of the head and nape, but the rest of its plumage resembles that of the above-mentioned species. Both birds are from six to six and a half inches long, and from nine to ten broad; the wing measures from two inches and five-sixths to three inches and a quarter, and the tail two inches.

The Sheep Wagtails appear in Europe about May, and leave again in August or September. During the breeding season they usually frequent marshy districts, and the immediate vicinity of water, but at other times pass almost the entire day in pasture lands, near flocks of sheep or herds of cattle. Most members of this family breed in Greece and North Africa, but some few in the northern parts of Europe. The flight of all is light, and often remarkably rapid; they generally hover before alighting, or sink suddenly and directly earthward, with wings completely closed. Their song consists of a few insignificant piping notes. Although of a social temperament, they display during the breeding season a most quarrelsome and pugnacious disposition, pursuing and giving battle to every small bird that ventures to approach their dwelling-place. The nest is concealed among grass, corn, or water plants, and is usually made in a slight hollow in the ground; in form it resembles that of a Lark or Pipit; the walls are loosely constructed with fine roots, grass, dry leaves, and moss, and the interior lined with wool, horsehair, and feathers. The eggs, from four to six in number, have delicate shells, of a yellowish, reddish, or greyish hue, veined, spotted, and clouded with brown, yellow, violet, and grey. But one brood is produced in the year; the female alone undertakes the duty of incubation, and hatches the nestlings in about three days. Both parents exhibit the utmost anxiety about the safety of their little ones, and frequently betray their retreat by the cries of alarm which they utter on the approach of a stranger. Young and old remain together until they start forth on their winter excursions.

Jerdon is of opinion that from the description of *B. melanocephalus* of Southern Europe, there is little doubt that it is identical with the Indian bird, which thus appears also to inhabit Northern Africa, South-eastern Europe, and Western Africa. "In India this Wagtail comes in towards the end of September, and does not quit the north of India till the end of April or beginning of May. It is exceedingly abundant in every part of India, usually assembling in considerable flocks and feeding among cattle, picking up the insects disturbed by their feet while grazing. These birds also frequent damp meadow ground near rivers or tanks, grain fields, where they may be often put up with the so-called Ortolan (*Calandrella brachydactyla*) during the heat of the day, and, late in the season, they may always be seen taking advantage of any shade—a tree, stone, small clump or paling, to shelter them from the mid-day heat. Now and then a few may be seen about houses in gardens and roads, occasionally even perching on a housetop or paling, but very rarely on trees. Many are snared at Calcutta and elsewhere to be served up as Ortolan."

According to our own observations by far the greater number of these Wagtails pass the winter in Central Africa, and we have also seen them constantly in Egypt at that season, wandering about the pastures with the cattle, and even accompanying them to their drinking-places.

THE YELLOW-HEADED WAGTAIL.

The Yellow-headed Wagtail (*Budytes citreolus*), a native of Central Asia, is somewhat larger than the species above described. Its length is seven inches, its breadth ten and a half, the wing measures three inches and a half, and the tail three inches and one-third. The summer plumage of the male is of a bright citron-yellow on the head and entire under side; the nape and upper portion of the back are black, the centre of the back slate-grey, and the rump brownish black. The small feathers on the wing-covers are greyish brown, broadly edged with dark grey, the centre and large feathers are margined with broad white borders, which alone are visible; the primaries and lower secondaries have narrow white edges, and the upper secondaries a broad white border to the outer web; the eight central tail-feathers are brownish black, and those at the exterior almost entirely white. The eye is brown, the beak and feet black. The female, who is not so large as her mate, is yellow on the brow, and greyish green on the top of the head and nape; the back is dark grey, the rump deep slate-colour; the cheeks and under side are of paler yellow than in the male, and the white lines on the wings narrower and more clearly defined. The young are grey above, and white shaded with yellow on the under side. Radde informs us that some few of these birds are met with in the central parts of Western Siberia, and that further east they become very numerous. According to Jerdon they are found throughout India during the winter, and there, as elsewhere, frequent marsh-land or the immediate vicinity of water.

"This species," says Jerdon, "is remarkable for the great length of the hind claw. It is found all over India in the cold weather, being migratory, and probably breeding in North-eastern Europe and Northern Asia. It is not very abundant, and is never found in dry places, like the Indian Field Wagtail, but on the banks of lakes or rivers, and more particularly in swampy ground or in inundated rice-fields, apparently affecting concealment more than others of this group. It has been obtained in breeding plumage at Mussooree, and is then a very beautiful bird."

THE GOMARITA, OR GARDEN WAGTAIL.

The Gomarita, or Garden Wagtail (*Nemoricola Indica*), has been separated from the bird above described on account of the shortness of the claw on the hinder toe, and the peculiar coloration of its plumage. The upper part of the body is greenish brown, the under side yellowish white; a double band of black passes over the breast, and a white stripe above the eye; the blackish wings are decorated with two white lines, and a third stripe passes across the base of the primary quills; the centre tail-feather is brown, the next in succession are blackish, and those at the exterior white, but blackish at the root, and edged with brown on the outer web. The eye is brown, the upper mandible pale black, the lower mandible whitish; the foot is light yellow, shaded with purplish brown. This bird is six inches and a half long, and ten broad; the wing measures three inches and one-eighth, and the tail two inches and five-eighths.

The Garden Wagtails are found throughout India, Ceylon, China, and Japan; according to Jerdon they are comparatively rarely seen in Southern and Central India, but are very numerous on some of the surrounding islands. Everywhere they frequent woods, forests, shady gardens, and plantations, living in solitude except during the breeding season, after which they remain for some time assembled in small parties or families. These birds do not migrate, and they moult their feathers but once in the year. Layard tells us that the Gomarita, or "Dung Spreader," as this species is called in Ceylon, receives its name from its habit of seeking for insects in the droppings from the cattle.

"The Black-breasted Wagtail," writes Jerdon, "is found throughout the whole peninsula of India and Ceylon, but is common nowhere; it is indeed rare in the southern provinces and in the bare table-land of Central India, and is not recorded from the North-western Provinces nor the Himalayas. It extends to Arracan, Burmah, Malacca, and some of the Malayan islands, where it is much more common than in continental India. I have only procured it myself in my own garden and on the Malabar coast. It appears not uncommonly about Calcutta, and, according to Blyth, at all seasons. It is quite a wood-loving species, never being found in the open plains, nor, that I have seen, about rivers, being chiefly found in shady gardens and orchards, and in roads in the forests. It is usually solitary, and feeds on various insects. It has no seasonal change of colouring, and appears to be found, at all events in the more northern parts of India, all the year round."

The SWALLOW WAGTAILS (*Enicurus*) are large and powerfully-built birds, inhabiting India and the Malay Islands; they are easily distinguished from their European congeners, by their comparatively strong beak, more rounded wing, in which the secondary quills are not prolonged, and their robust feet. The beak is of moderate size, strong, straight, broad at its base, furnished with a keel at its culmen, and gently curved at its extremity, which is slightly incised; the toes are armed with very hooked claws, the fourth and fifth, sometimes the fifth and sixth, exceed the rest in length. The extremity of the tail is so deeply forked that the centre feather is not more than one-third as long as those at the exterior.

All the species of Swallow Wagtails with which we are acquainted inhabit mountain regions, and are numerously met with in their favourite resorts among the rocks. They are always found in the vicinity of streamlets or waterfalls, into which they frequently wade. In their habits they resemble other members of their family, and, except after the breeding season, live alone or in pairs.

THE MENINTING.

The MENINTING (*Enicurus Leschenhaulti*, or *Enicurus coronatus*) is black upon the upper part of the body, neck, and breast, and white upon the crest and under side; the black wings are decorated with a broad white stripe, the outer tail-feathers are pure white, the rest black, broadly tipped with white; the beak is black, and the foot yellow. The length of the body is about ten or eleven inches. The Meninting is an inhabitant of the Malay Islands, where it frequents the mountain regions, and is usually met with near shallow lakes or streams, at an elevation of from sixteen hundred to four thousand feet above the sea. Bernstein tells us that he saw one of these birds on the Pangerango, at an altitude of ten thousand feet, but this must be regarded as a very unusual occurrence. In disposition this species is gentle and timid, but, if unmolested, will allow a stranger to approach without testifying any alarm, merely flitting a few paces farther off should the intruder come too near the spot on which it is perched. When excited the Meninting raises its crest, repeatedly jerks its closed tail upwards, and then, spreading it like a fan, slowly lowers it. Its voice resembles that of the White Wagtail. The nest, which is invariably placed upon the ground at no great distance from water, is frequently made in a small hollow in the earth, this being lined with moss, upon which a layer of half-decayed leaves is arranged to form an elastic bed for the young family. The eggs are of a dull greenish or yellowish white, thickly marked with faint red, yellow, or light brown spots; these often form a wreath at the broad end. We have never found more than two eggs in a nest. The young are tended with great devotion by their parents, who, should danger be at hand, frequently betray the presence of their brood by uttering a gentle, long-sustained note of distress. The Meninting subsists upon worms and insects, seeking its food amongst the plants that border its favourite streams. It is very partial to water, and frequently wades therein when pursuing its prey.

The ACCENTORS (*Accentores*) may be regarded as forming the connecting link between the true Singing Birds and the strong-beaked granivorous races, more especially the Larks. They are recognisable by their powerful body, moderate-sized or long wing, in which the third or fourth quill exceeds the rest in length, as also by their short, broad tail, strong foot, armed with powerful toes, and much-curved claws. The conical awl-shaped beak turns inwards at its margins, and the nostrils are covered with a skin; the plumage is lax, and formed of feathers of a relatively large size; the sexes are alike in appearance, but the coloration of the young differs considerably from that of the adult birds. Only two species of Accentors can properly be regarded as European, the rest inhabit Asia, and are generally seen hopping over the ground or flying very low, in search of the insects, berries, or delicate seeds upon which they subsist; they never frequent lofty trees, or even tall shrubs, except during the breeding season, when the males occasionally perch upon low branches, whilst pouring out their, in most cases, very agreeable song. As winter approaches some species wander southward, while others merely quit the bleakest and most exposed peaks for their rocky fastnesses. Incubation takes place early in the spring, and two broods are generally produced in the course of the summer. Their nests are carefully and neatly built of moss and hay, and lined with some soft and elastic materials. The eggs, from three to six in number, are of greenish hue.

THE MENINTING (*Enicurus coronatus*).

The HEDGE SPARROWS, or HEDGE WARBLERS (*Tharraleus*, or *Accentor*), have a slender body, a comparatively weak and pointed beak, short, rounded wings, in which the fourth quill is the longest, a moderate-sized tail, straight or incised at its extremity, and a high foot.

THE HEDGE SPARROW, OR HEDGE WARBLER.

The TRUE HEDGE SPARROW, or HEDGE WARBLER (*Tharraleus modularis*, or *Accentor modularis*), is six inches long and eight inches and one-sixth broad, the wing measures two inches and three-quarters, and the tail two inches and one-quarter. The female is considerably smaller than her mate. The plumage of the adult bird is of a dusky reddish brown, spotted with a still deeper shade on the shoulder and upper part of the back; the head, fore part of the throat, and breast are brownish grey, or slate-colour. In autumn the feathers on these parts have light edges; the belly is brownish yellow, darkly spotted, and the rump greyish brown; the outer web of the quills is reddish brown, striped once, in some instances twice, with a whitish hue; the tail is of an uniform greyish brown. The eye is light brown, the beak brown, and the foot reddish. The young are reddish yellow spotted with blackish brown on the mantle, and of a whitish hue spotted with greyish black on the centre of the belly. The Hedge Sparrow inhabits the whole of Europe, from sixty-four degrees north latitude as far south as the Pyrenees, Alps, and Balkan Mountains; it is only occasionally seen still farther north, but visits Southern Europe, Northern Africa, and Western Asia, regularly during its migrations. In Great Britain it remains throughout the entire year. For some time after their return to their native lands the Hedge Sparrows resort to the open country, and take up their quarters on bushes and hedges; previous to the breeding season, however, they retire to the shelter of their favourite fir or pine woods, or, though comparatively rarely, occupy groves of leafy trees; they also exhibit a decided preference for mountainous regions.

In Great Britain this brisk little bird is a common frequenter of gardens, orchards, or hedgerows, where it hops nimbly and almost incessantly from twig to twig, in search of the insects, larvæ, and seeds upon which it mainly subsists. According to Mr. Yarrell, it seldom or never touches fruit. During the winter it is a constant visitor to our farmyards and houses, and when the weather is severe is frequently reduced to seek a scanty supply of food from drains and gutters. All the movements of the Hedge Warbler are equally agile and rapid; it hops with the utmost alacrity over the surface of the ground, climbs and scrambles amid the thickest bushes with wonderful agility, and flies lightly and gracefully, not merely from bush to bush, but sometimes high into the air. Whilst in pursuit of food it usually prefers to keep within the shelter of the foliage, but when about to utter its short, sweet, and somewhat plaintive song, it perches upon a projecting branch at a considerable elevation, and, if alarmed, darts directly downwards into the innermost recesses of the brushwood or shrubs beneath. Mudie describes the voice of the Hedge Sparrow as being particularly plaintive in tone during the winter months, and remarks that in severe seasons it utters its peevish cry with an apparent feeling of suffering and desolation. The song of the males is often heard as early as January; and by the middle of February each has found a mate and retired to some quiet spot, in order to commence building operations. The nest, which is generally finished by the end of March, is loosely put together; it is formed exteriorly of moss and fibres, and within is neatly and carefully lined with interwoven horsehair and wool; both parents assist in the labour of building, and have generally completed their snug little abode by the middle of March: it is, however, exposed to danger and observation, being placed in a bush or hedge, without, as yet, the screen of leaves, and often is visited by the Cuckoo, with the view of depositing her progeny. The eggs, from four to six in number, are of a blueish green colour. The first brood is hatched in April, and a second is produced later in the season. Should the eggs be stolen from the nest, as is too frequently the case, the female will occasionally furnish a third brood. The young are hatched in about a fortnight, both father and mother sharing the tedium of incubation, and tending them with the utmost care and devotion until they are strong enough to seek their own food.

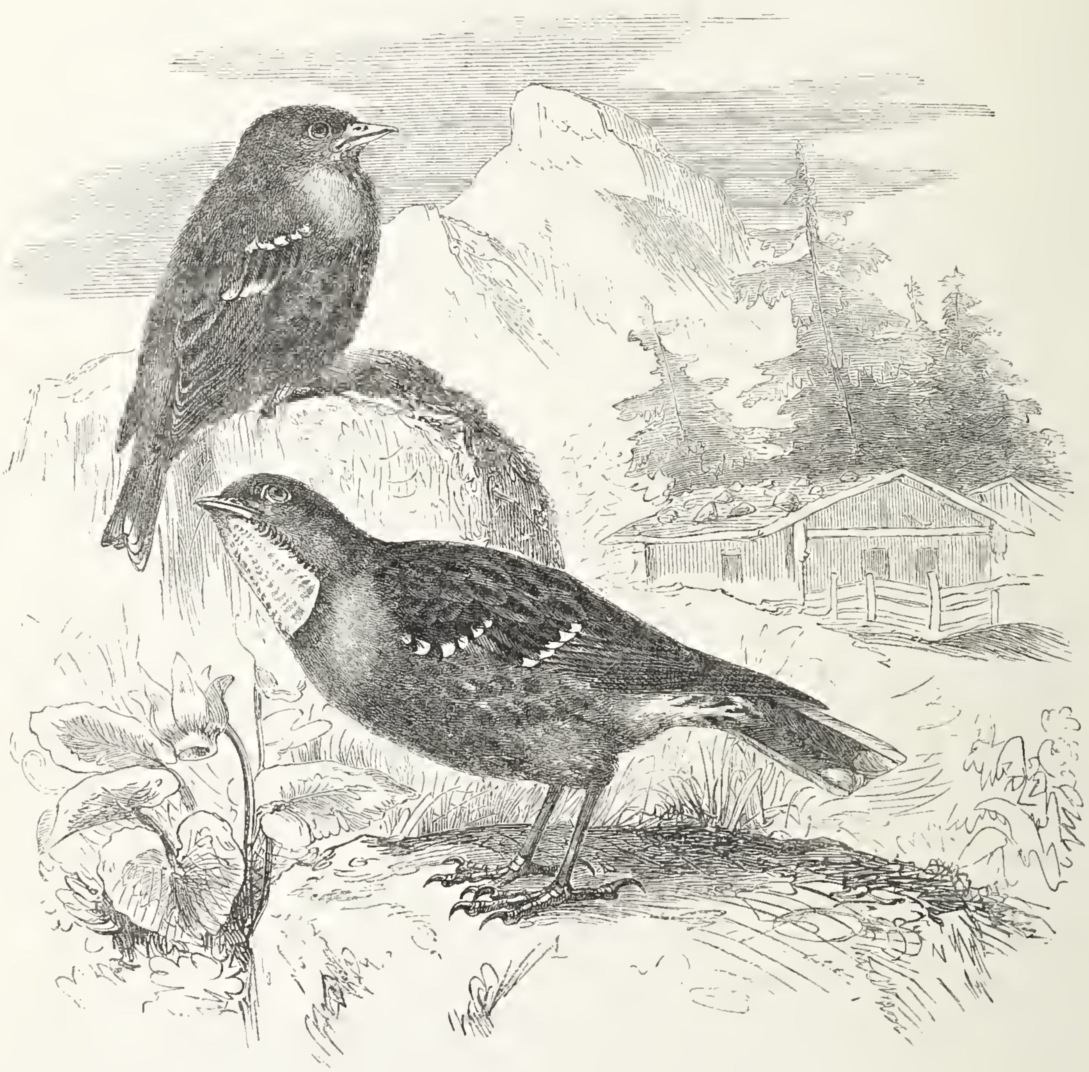
THE SIBERIAN ACCENTOR.

The Siberian Accentor (*Tharraleus montanellus*) is blackish brown upon the top of the head, bridles, and region of the eye; a broad yellowish white stripe passes over the eyebrow, and almost encircles the head; the nape is grey, and the back reddish brown, spotted with a deeper shade; the throat and lower tail-covers are whitish; the region of the crop and the upper part of the breast are deeply shaded with reddish yellow, and marked with crescent-shaped black spots; the sides of the breast are shaded with reddish yellow and reddish brown. The eye is pale yellowish brown, the mandibles greyish black, the lower one lightest at the base, the foot is of a dirty yellowish white. This species is from four inches and two-thirds to five inches and one-third long; the wing measures two inches and seven lines, and the tail about two inches and six lines. This beautiful bird inhabits Siberia, and has been found in Hungary, Dalmatia, and Italy.

THE ALPINE ACCENTOR.

The Alpine Accentor (*Accentor Alpinus*) represents a group of birds in appearance very closely resembling the Larks. Their beak is slightly curved and pointed, compressed at its sides, narrow towards its extremity, and broader than it is high at the base; the legs are stout, the toes thick, and the claws much hooked, but blunt; the wings, in which the third quill exceeds the rest in length, are long; the tail is short, and deeply incised; the upper portion of the body is deep grey, spotted with brown, the under side ash-grey, marked at the sides with reddish brown; the throat is white, slightly spotted with brown; the quills and tail-feathers are blackish brown, the latter spotted with white; the wings are ornamented with two white lines. Both sexes are alike in colour. The young are grey, spotted with reddish yellow; black on the back, and reddish yellow, chequered with light and dark grey, on the under side; the wing-feathers are brown, edged with rust-red, and the wings enlivened by two reddish yellow stripes. The tail is brown, and also tipped with reddish yellow; the eye is light brown, the beak yellow at the base and black at the tip; the foot is brown. This species is seven inches long and eleven and three-quarters broad; the wing measures three inches and three-quarters, and the tail two inches and three-quarters; the female is half an inch shorter, and three-quarters of an inch narrower than her mate.

These birds inhabit all the lofty mountains of Central and Southern Europe and Southern Asia, and are particularly numerous upon the Alps, where they are generally met with at an altitude of from 4,000 to 6,000 feet above the sea. They are also occasional visitors to the south of Great Britain. In winter they usually descend to the plains and valleys in search of seeds, but return to their favourite haunts as soon as the snow has melted from the surface of the rocks; they are then to be seen running lightly or flying from one peak to another, as they pour out their clear, melodious song, many notes of which will bear comparison with those of the Lark itself. Their disposition appears to be somewhat capricious; at one time they are all life and activity, at another perfectly quiescent. Gloger explains this peculiarity by telling us that they are only brisk and lively while searching for food, and that their change of demeanour is attributable to the process of digestion that is being carried on as they sit erect and motionless often for a whole half hour at a time. While hopping on the ground the Alpine Accentor carries its tail slightly elevated, sometimes so high as to be raised above the wings. The flight of these birds is light and rapid, and capable of being sustained for a very considerable distance; but, under ordinary circumstances, they keep near the ground, and only soar into the air during the breeding season. Towards man they exhibit the utmost confidence, and are frequently to be seen hopping about close to a party of mountaineers or group of shepherds, quite indifferent to and apparently almost unconscious of the voices and movements around them. Insects, spiders, seeds, and berries constitute their principal food, and they devour grass seed, in particular, in great quantities. The nest, according to Schinz, is commenced early in the spring, and is situated in clefts or holes of the rock, or amid Alpine rose bushes; sometimes on the roofs of houses, care being generally taken that the little structure is so placed as to be completely sheltered from wind and weather. The nest, which is circular and semi-conical, is three inches both in diameter and in depth; it is constructed alternately of grass and moss, and lined with wool, hair, or similar materials. The eggs, from four to five in number, are of an oval shape, smooth, and of a blueish green. It is at present undecided whether the female is assisted by her mate in the work of incubation. Two broods are produced in the year, the first in May, the second in July.



THE ALPINE ACCENTOR (*Accentor Alpinus*).

The TITS (*Pari*), although differing in many respects, resemble each other in most essential particulars. All are of small size, with compact bodies and short limbs. The beak is conical, straight, and short, with sharp margins, compressed at its sides and pointed at its tip; the feet are sturdy, the toes powerful and of moderate size, and the claws comparatively large and very much hooked. The wings, in which the fourth or fifth quill is the longest, are short and rounded; the tail short, and either straight or very slightly incised at its extremity; occasionally it is very long, and graduated at its sides. The plumage, which is thick, and composed of long and lax feathers, is bright and elegant in its coloration.

Most members of this family inhabit the northern parts of the Eastern Hemisphere, some few belong to North America, and others are natives of Asia and Africa. Opinions differ as to whether they migrate at the approach of winter, but our own observations have convinced us that even those frequenting northern countries never wander to any great distance from their native haunts. All are social in their habits, and consort not only with their own kind, but also seek the company of other species, often remaining in their society for weeks at a time. They seldom visit seed-growing districts, but frequent woods and forests, living almost exclusively upon trees or large shrubs, climbing and flying about the branches in what may literally be termed an incessant search for food. On the ground their movements are clumsy, and they seldom undertake long excursions, but generally only flit from one tree to another, feeding principally upon insects and seeds; of the former they devour enormous quantities, as their life of restless activity renders an unusually large supply of nourishment indispensable. The Tits may, therefore, be regarded as valuable assistants to the gardener and farmer, richly meriting their favour and protection. Most species breed twice in the year, laying each time from seven to twelve eggs.

The CRESTED WRENS or KINGLETS (*Regulus*) are recognisable by their straight, thin, finely-pointed beak, which is broad at the base, raised at the culmen, and slightly notched at the curved tip of the upper mandible. The feet are slender, the tarsi high, and the claws very decidedly hooked; the wings, in which the fourth and fifth quills are the longest, are short, broad, and much rounded; the tail is of medium size, and incised at its extremity; the plumage is thick, and composed of large, loose feathers; the nostrils are covered with small feathers, and the corners of the mouth with a few bristle-like hairs; the feathers on the crown of the head are generally prolonged into a crest, and are of brilliant hue. These birds are met with throughout Europe, Asia, and North America, and from time to time make their appearance in North-western Africa.

Their journeys are extraordinary when compared with their strength, size, and powers of flight, but they are often exhausted before arriving at their destination. Mr. Selby has related the following account of a large migration on the coast of Northumberland in 1822:—

"On the 24th and 25th of October, 1822, after a very severe gale, with thick fog from the north-east (but veering, towards its conclusion, to the east and south-east), thousands of these birds were seen to arrive upon the sea-shore and sand-banks of the Northumbrian coast, many of them so fatigued by the length of their journey, or perhaps by the unfavourable shift of wind, as to be unable to rise again from the ground, and great numbers were in consequence caught or destroyed. This flight must have been immensely numerous, as its extent was traced through the whole length of the coasts of Northumberland and Durham. There appears little doubt of this having been a migration from the more northern provinces of Europe (probably furnished by the pine forests of Norway, Sweden, &c.), from the circumstance of its arrival being simultaneous with that of large flights of the Woodcock, Fieldfare, and Redwing. Although I had never before witnessed the actual arrival of the Golden-crested Regulus, I had long felt convinced, from the great and sudden increase of the species during the autumnal and hyemal months, that our indigenous birds must be augmented by a body of strangers, who make these shores their winter resort."

THE GOLDEN-CRESTED WREN.

The GOLDEN-CRESTED WREN (*Regulus cristatus*, *flavicapillus*, or *auricapillus*) is yellowish green on the mantle, and light grey beneath; the throat is whitish grey; the crown of the head is saffron yellow, its sides golden yellow, decorated with a black stripe; the wings are enlivened by two light-coloured bands. In the plumage of the female all the tints are duller, and the yellow on the head paler than in her mate. The young are entirely without the bright colouring on the head. This species is three inches and two-thirds long, and five inches and five-sixths broad. The wing measures one inch and five-sixths, and the tail an inch and a half. The Golden-crested Wren is the only member of this family found in Scandinavia, and it also breeds as far south in Europe as Greece, but is seldom seen in Spain. Notwithstanding the apparent delicacy of these birds, they are capable of sustaining an unusual degree of cold, and great numbers pass the entire winter in the pine forests of Sweden. In England and Ireland they also remain throughout the whole year, but we are told that those living in the Orkneys wander as far as the Shetland Isles when the cold sets in. A most extraordinary circumstance that took place in 1823 is related in the Memoranda of the Wernerian Society, namely, the total disappearance of the whole race of these birds, natives as well as strangers, throughout Scotland and the north of England. This happened towards the end of January, a few days previous to the continued snowstorm that was felt so severely in the northern counties of England and the eastern parts of Scotland. The range and route of this migration are unascertainable, but it was most probably a distant one, from the fact of not a pair having returned to breed or pass the succeeding summer in the situations they had been known always to frequent; nor was one of this species to be seen till the following October, about the usual time for our receiving an annual accession of strangers to our indigenous birds. Like their congeners, these tiny, delicate Wrens principally frequent fir and pine forests, about the branches of which they scramble with wonderful agility, hanging head downwards from the twigs, or darting like meteors from branch to branch, in a restless and incessant search for the insects upon which they subsist. Their voice is gentle and twittering, and their song occasionally uttered as they hover in the air over a bush or shrub. During the period of incubation, which frequently commences as early as February, the males endeavour to attract the attention of their future partners by spreading the beautiful crest upon their heads, and indulging in a variety of animated and excited movements, as they hop or fly about the spot where the desired mate is perching. The nest is spherical, usually placed at the extremity of a branch, beautifully constructed of moss or lichen, and in most instances snugly lined with feathers, cotton wool, or down from plants. The eggs, from six to ten in number, have a pale reddish white or yellowish white shell, finely spotted with red, and are scarcely larger than peas, not exceeding six lines in length, and five in diameter. So voracious are the young, that Colonel Montague observed the mother come thirty-six times in an hour with morsels for her craving family, and continue her labours without intermission for sixteen hours in the day. Mr. Selby tells us that he has seen fully-fledged young by the end of April.

THE DALMATIAN WREN.

The DALMATIAN WREN (*Regulus modestus*).—"The only history of this bird," says Mr. Gould, "that we have been able to collect was that written on the label attached to it by the Baron de Feldegg, of Frankfort, which is as follows:—'I shot this bird, which on dissection proved to be a male, in Dalmatia, in the year 1829.' We were informed, at the same time, that it was not known to any German ornithologists, and, consequently, had not received a specific title. This we have ventured to give, and suggest the term *modestus*, in allusion to its chaste plumage and the absence of the crest, which forms so conspicuous a feature in other species of this genus. Its most conspicuous characters are the three yellow stripes which ornament the head; the brighter and most highly coloured of these marks, contrary to what obtains in any other *Reguli*, being that over each eye, while the coronal stripe is palest, and consists of feathers similar in length to those which cover the rest of the head. With the exception of the stripes on the head, the whole of the upper surface is delicate olive green, becoming abruptly paler on the rump; the quills and tail are brown, edged with pale yellow, which is more conspicuous on the secondaries; two transverse bands of the same colour cross the shoulders. The whole of the under surface is pale greenish white; bill and tarsi brown."

THE FIRE-CRESTED WREN.

The Fire-crested Wren (*Regulus ignicapillus*, or *Regulus pyrocephalus*) is readily distinguished from the bird above described by a black stripe that passes across and a white stripe that passes over the eyes. The crown of the head is fiery red, and bright-flame yellow at its sides, surrounded by a black line, which is broader than that on the Golden-crested Wren. The two species are almost alike in size. The Fire-crested Wren is met with in France, Germany, Italy, Greece, and Spain, and has been seen, although very rarely, in England. In most of the above-mentioned countries it only appears during its wanderings, but is known to breed in Greece. Such of these birds as inhabit Europe closely resemble the species above described in their movements and habits.

According to Jerdon, "the Himalayan Fire Crest is very like the *Regulus ignicapillus* of Europe, but is larger, and has the flame-coloured crest more developed. The Himalayan Fire-crested Wren has only been found in the North-western Himalayas, and even there, apparently, it is not very common."

THE SATRAP WREN.

The Satrap-Crowned Wren (*Regulus satrapa*), a North American species nearly resembling its European congeners, is brownish grey upon the back, and greyish white upon the under side; the breast is shaded with brownish yellow, the eyes are encircled by a greyish white ring, and the head decorated on each side with a black band, edged with bright yellow, and with a broad fiery red stripe across the crown; the quills and feathers of the wing-covers are dusky, the former edged and the latter tipped with greenish yellow; the eye is brown, the beak black, and the feet brownish yellow. The bird is four inches long and seven broad.

Of the American Fire-crested Wren, or Fiery-crowned Knight, Nuttall writes as follows:—"The *Regulus tricolor* (or *Regulus satrapa*) appears associated only in pairs, which are seen on their southern route, in this part of Massachusetts, a few days in October, and about the middle of the month, or a little earlier or later according to the setting in of the season, as they appear to fly before the desolating storms of the northern regions, whither they retire about May to breed. Some of these birds remain in Pennsylvania until December or January; proceeding, probably, but little further south during the winter. They are not known to reside in any part of New England, but retire to the same remote and desolate limits of the farther north with an allied species, of which they have most of the habits. They are actively engaged during their transient visits to the south in gleaning up insects and their lurking larvæ, for which they perambulate the branches of trees of various kinds, frequenting gardens and orchards, and skipping and vaulting from the twigs, sometimes head downwards, like the Chicadee, with whom they often keep company, making only now and then a feeble chirp. They appear at this time to search chiefly after spiders and dormant concealed coleopterous or other insects; they are also said to feed on small berries and some kinds of seeds, which they break open by pecking with the bill in the manner of the Titmouse. They likewise frequent the sheltered cedar and pine woods, in which they probably take up their roost at night. Early in April they are seen on their return to the north in Pennsylvania. At this time they dart among the blossoms of the maple and elm, in company with others of their race, and appear more volatile and actively engaged in seizing small flies on the wing, and collecting minute lurking caterpillars from the opening leaves. On the 21st of May, 1835, I observed this species feeding its full-fledged young in a tall pine tree on the banks of the Columbia river."

"If we compare the American Golden-crest Wren with the European, we find that they agree in general appearance, in the proportional length of the quills and in the form of the tail, as well as in that of the bill and legs. Their differences are the following:—

"*Regulus tricolor* is longer by half an inch than *Regulus cristatus*, its bill is stronger and one-twelfth of an inch shorter, its claws are also stronger and shorter, and the flame-coloured patch on the head is more extended and brighter. The European species never has so much grey on the neck and back, and its lower parts are always more tinged with brownish yellow. The other differences are not very obvious; but the difference in the size of the bill, were there no other characteristics, would be enough, in a family of birds so closely resembling each other as the *Reguli*, to point out the American as distinct from the European species.

THE GOLDEN-CRESTED WREN (*Regulus flavicapillus*).

"On the 23rd of January," continues the same writer, "I saw great numbers of these birds in the woods near Charlestown, searching for food high in the trees as well as low down, and so careless of us, that, although we would approach within a few feet of them, they were not in the least disconcerted. Their feeble chirp was constantly repeated. We killed a great number of them, in hopes of finding among them some individuals of the species known under the name of *Regulus ignicapillus*, but in this we did not succeed. At times they uttered a strong querulous note, somewhat resembling that of the Black-headed Titmouse. The young had acquired their full plumage, but the females were more abundant than the males. At this season the yellow spot on their head is less conspicuous than towards spring, when they raise their crest-feathers while courting. The young, shot in Newfoundland, in August, had this part of the head of a uniform tint with that of the body. With us they are amazingly fat, but at Newfoundland we found them the reverse."

"The Satrap Wren," says Audubon, "breeds in Labrador, where I saw it feeding its young in August, when the species appeared already moving southward; but although it was common there and in Newfoundland, as was the Ruby-crowned Knight, we did not succeed in our search for its nest. It enters the United States late in September, and continues its journey beyond their limits, as I have met with it on the borders of our most southern districts during winter. Individuals remain in all the Southern and Western States the whole of that season, and leave them again about the beginning of March. They generally associate in groups, composed each of a whole family, and feed in company with Titmice, Nuthatches, and Brown Creepers, perambulating the tops of trees and bushes, sometimes in the very depth of the forests or of the most dismal swamps, while at other times they approach the plantations and enter the gardens and yards. Their movements are always extremely lively and playful. They follow minute insects on the wing, seize them among the leaves of the pines, or search for larvæ in the chinks of the branches. Like the Titmice, they are often seen hanging to the extremities of twigs and bunches of leaves, sometimes fluttering in the air in front of them, and are unceasingly occupied. They have no song at this season, but merely emit now and then a low *screep.*"

THE RUBY-CROWNED WREN.

The RUBY-CROWNED WREN (*Regulus calendulus*) is four inches long and six in extent of wing; the upper parts of the head, neck, and back are olive, with a considerable tinge of yellow; wings and tail dusky purplish brown, exteriorly edged with yellow olive; secondaries and first row of wing-coverts edged and tipped with white, with a spot of deep purplish brown across the secondaries, just below their coverts; the hinder part of the head is ornamented with an oblong lateral spot of vermilion, usually almost hid by the other plumage; round the eye a ring of yellowish white; whole under parts of the same tint; legs dark brown, feet and claws yellow, bill slender, straight not notched, furnished with a few black hairs at the base; inside of the mouth orange. The female differs very little in its plumage from the male, the colours being less lively, and the bird somewhat less.

"This little bird," says Wilson, "is an American species, visits us early in the spring from the south, and is generally first found among the maple blossoms about the beginning of April; these failing, it has recourse to those of the peach, apple, and other fruit trees, partly for the tops of the sweet and slender stamina of the flowers, and partly for the winged insects that hover among them. In the middle of summer I have rarely met with these birds in Pennsylvania; and as they penetrate as far north as the country round Hudson's Bay, and also breed there, it accounts for their late arrival here in fall. They then associate with the different species of Titmouse and the Golden-crested Wren, and are particularly numerous in the month of October and beginning of November, in orchards, among the decaying leaves of the apple-trees, that at that season are infested with great numbers of small, black-winged insects, among which they make a great havoc. I have often regretted the painful necessity one is under of taking the lives of such inoffensive, useful little creatures, merely to obtain a more perfect knowledge of the species, for they appear so busy, so active and unsuspecting, as to continue searching about the same twig, even after their companions have been shot down beside them. They are more remarkably so in autumn, which may be owing to the great number of young and inexperienced birds which are then among them; and frequently at this season I have stood under the tree, motionless, to observe them, while they gleaned among the low branches, sometimes within a foot or two of my head. They are extremely adroit in catching their prey, have only at times a feeble chirp, visit the tops of the tallest trees as well as the lowest bushes, and continue generally for a considerable time among the branches of the same tree, darting about from place to place; appearing, when on the top of a high maple, no bigger than humble-bees."

"Notwithstanding all my endeavours," continues our author, "I have never been able to discover their nest, though, from the circumstance of having found them sometimes here in summer, I am persuaded that they occasionally breed in Pennsylvania, but I know several birds no larger than this that usually breed on the extremities of the tallest trees in the woods, which I have discovered from their beginning before the leaves are out; many others, no doubt, choose similar situations, and, should they delay building until the woods are thickened with leaves, it is no easy matter to discover them. In fall they are so extremely fat, as almost to dissolve between the fingers as you open them, owing to the great abundance of their favourite insects at that time."

The PENDULINE TITMICE (*Ægithalus*) are small, slenderly-formed birds, with awl-shaped beaks, scarcely perceptibly curved at the tip; short, blunt wings, in which the third, fourth, and fifth quills are the longest, and nearly of equal length; and moderate-sized tails, slightly incised at the extremity. The plumage is very lax, and the males more brightly and beautifully coloured than the females. The young differ in their appearance from both parents.

THE TRUE PENDULINE TITMOUSE.

The TRUE PENDULINE TITMOUSE (*Ægithalus pendulinus*) is greyish red on the upper part of its body, on the under side whitish, shaded with rust-red on the breast; a black stripe, beginning at the cheeks, passes across the eyes to the region of the ear; the quills and tail-feathers are blackish, with light borders; the eye is brown, the beak of various shades of black, whitish at its margins; the feet are black or greyish black. The female is more dusky, and has less black upon the brow and sides of the head than her mate. In the young the black cheek-stripes are not indicated. The upper portion of the body is reddish grey. This species is from four inches to four and a half long, and from six to six and a half broad; the wing measures two inches and a quarter, and the tail one inch and three-quarters.

These elegant little birds inhabit all the eastern parts of Europe and a large portion of Asia, and their active, sprightly demeanour entitles them to a place among the most interesting members of the family to which they belong. From morning to night they are almost incessantly in motion, climbing nimbly among the reeds, or hopping from twig to twig, in search of the insects and larvæ upon which they subsist. They generally, however, keep well sheltered beneath the foliage, where their presence is constantly betrayed by the frequent utterance of their clear, chirping note. Whether this species migrates is as yet undecided; it is, nevertheless, certain that it disappears from its native haunts about September or October, and does not return until March.

"Proverbial as the nests of the Tits are for beauty of structure," says Mr. Gould, "none are more remarkable and curious than that of the present species; it is constructed of the soft down of the poplar or willow, and this substance, which closely resembles cotton wool, is woven together with admirable ingenuity, so as to form a flask-shaped nest with a lateral opening into the internal chamber. It is suspended at the extremity of a drooping branch of a willow, or any similar tree hanging over the water."

We are indebted to Baldamus not only for a very complete description of the remarkable nest made by these birds, but also for a detailed account of the mode of building it. "I have had an opportunity," writes that naturalist, "of watching during seven weeks the daily operations of a pair of these ingenious little builders, and have carefully examined upwards of thirty nests." He observed, moreover, the whole process of their construction, and procured several in different stages of completion. The situation chosen was generally in the vicinity of a swamp, and the nests were almost invariably suspended to the innermost twigs of the branches of a willow tree, usually at an elevation of twelve or fourteen feet from the ground, although some were at a height of from twenty to thirty feet, and one example was obtained from the very summit of a high tree.

In building these admirable structures the two sexes seem to emulate each other in industry and perseverance, for without this, it is difficult to conceive how such an edifice can be completed in the short space of about fourteen days.

"The mode of proceeding in the construction of one of these nests," continues the same writer, "is as follows :—First of all the bird begins by winding a quantity of wool, goats' hair, bast, or hempen thread, around the selected twig, at a part where it becomes forked, and between the forks are laid the foundations of the walls of the nest, which thus becomes securely fixed; from this basis a sort of felt-work is prolonged into the shape of a shallow basket, in which condition it was formerly thought to be a supernumerary nest, constructed for the accommodation of the male bird. As, however, the work proceeds, the walls are still further produced by an accumulation of fitting materials, which now consist of down collected from poplar and willow trees, interwoven with threads of bast, wool, and hair, while the fibres of vegetable cotton are glued and matted together by the aid of saliva supplied by the birds themselves. The structure now presents the appearance of a basket with thick rounded walls, and the next part of the process is to construct the side entrance, which terminates in a small round hole, while the other side also has a passage from below; the one with the round opening is now provided with a tube of from one to three inches long, while the other remains open, and only felted and smoothed down at the edges; lastly, the bottom of the inside of the nest is thickly carpeted with loose unrolled vegetable wool, and the structure is at length completed. The nest now appears a round ball or bag, from six to eight inches in depth, and from four to five in width, with a round entrance like the neck of a bottle, which at first bending down soon stands out horizontally towards the entrance, which is circular, and provided with a slightly thickened margin."

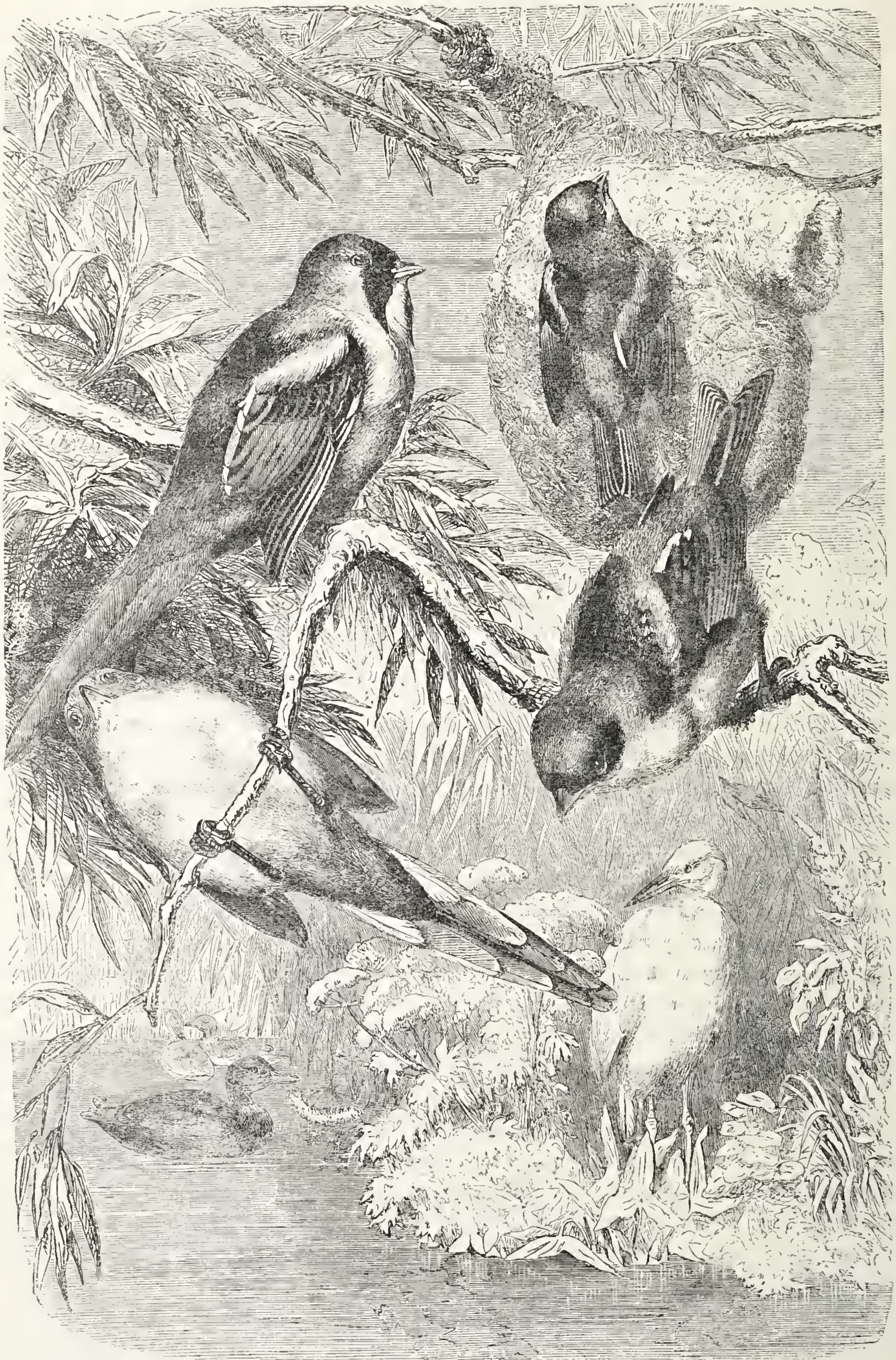
"It is impossible to confound such a nest with that of any other bird, and, therefore, we are quite assured that the Bottle Tit has repeatedly made its nest in Germany, where deserted nests are frequently found in winter by men employed in clearing away the reeds in various localities."

The eggs, according to Baldamus, are usually seven in number, and have a smooth, delicate, pure white shell, which, owing to its transparency, appears pale red until it is emptied of its contents. We are told, on good authority, that both parents assist in the process of incubation. The young are reared principally upon small caterpillars, flies, and beetles.

The REED TITMICE (*Panurus*) are distinguishable by their slender body, long and much graduated tail, moderate-sized wings, in which the fourth and fifth quills exceed the rest in length, and their short, much-curved beak. The plumage is comparatively smooth and compact, but varies according to the age or sex of the bird.

THE BEARDED TITMOUSE.

The BEARDED TITMOUSE (*Panurus biarmicus*) is light cinnamon brown on the upper part of the body, greyish blue on the crown of the head, and light rose-red on the under side; the throat is whitish, the region of the tail black; the brown wings are decorated with a white stripe, and edged with a line of black. The chin of the male is covered with a beard-like tuft of soft black feathers,



BEARDED AND PENDULINE TITS.

about nine inches long. The plumage of the female is paler; the back is of a light shade, darkly spotted; the lower tail-covers are pale rust-red, and the very slightly indicated beard white. The young are almost black upon the back. The length of this species is from six inches to six and a half, and its breadth from seven inches to seven and a half; the wing measures two inches and a half, and the tail three inches and a quarter.

The Bearded Titmouse is met with in all the north-eastern parts of Europe. In Great Britain it is but rarely seen; it is, however, comparatively numerous in Holland, South Hungary, Greece, and a portion of Asia Minor. Everywhere it seeks the reed-covered banks of rivers, and lives in pairs or in small families.

Dr. Leach was induced to separate this very interesting bird from the genus *Parus* in consequence of its differing in several minor characters from the other species of that genus, particularly in the situation it affects as a place of abode and nidification, constructing a nest on or near the ground in wet and marshy places. "Its food," continues Mr. Gould, "is also very different, consisting of the seeds of reeds, with aquatic insects and minute-shelled snails, for the trituration of which it is provided with a strong muscular gizzard. It is more particularly abundant in the low and marshy districts of Holland, France, and Germany. Its disposition is timid, and its manners shy and retired, dwelling in situations both local and difficult of access, a circumstance which, until lately, has prevented naturalists from giving any details, especially of its peculiar habits." We are indebted to Mr. Hoy for the best account of this bird yet published, as given in the "Magazine of Natural History," (Vol. III., page 328), from which the following is extracted:—

"The borders," says Mr. Hoy, "of the large pieces of water in Norfolk, called 'broads,' particularly Hickling and Horsey Broads, are the favourite places of resort of these birds; indeed, it is met with in that neighbourhood wherever there are reeds in any quantity, with fenny land adjoining. During the autumn and winter they are found dispersed generally in small parties throughout the whole length of the Suffolk coast, wherever there are large tracts of reeds. I have found them numerous in the breeding season on the skirts of Whittlesea, near Huntingdonshire, and they are not uncommon in the fenny districts of Lincolnshire; whether they are to be met with further north I have no means of ascertaining, but they do not appear to have been noticed north of the Humber. They begin building in the end of April. The nest is composed on the outside of the dead leaves of the reed and sedge, intermixed with a few pieces of grass, and invariably lined with the top of the reed, somewhat in the manner of the nest of the Reed Wren (*S. arundinacea*), but not so compact in the interior. It is generally placed in a tuft of coarse grass or rushes, near the ground, on the margin of the dykes in the fen; sometimes fixed among the reeds that are broken down, but never suspended between the stems. The eggs vary in number from four to six, rarely seven; they are pure white, sprinkled all over with small purplish red spots, intermixed with a few small faint lines and markings of the same colour—size about the same as that of the Greater Tit, but much more rounded and shorter. Their food during winter is principally the seed of the reeds, and so intent are they in searching for it, that I have taken them with a bird-lime twig attached to the end of a fishing-rod. When alarmed by any sudden noise, or the passing of a hawk, they utter their shrill musical notes, and conceal themselves among the thick bottom of the reeds, but soon resume their station, climbing the upright stems with the greatest facility. Their manners in feeding approach near to those of the Long-tailed Tit; they often hang with the head downwards, and occasionally assume the most beautiful attitudes. Their food is not entirely reed-seed, for they sometimes eat insects and their larvæ, and the very young shelled snails of different kinds, which are numerous in the bottom of the reedlings. I have been enabled to watch their motions whilst in search of insects, having, when there is a little wind stirring, been often within a few feet of them, quite unnoticed among the thick reeds. Were it not for their note betraying them, they would be seldom seen. The young, until their autumnal moult, vary in plumage from the old birds; a stripe of blackish feathers extends from the hind part of the neck to the rump. It has been said that the males and females keep separate during the winter, but I have always observed them in company; they appear to keep in families until the pairing time, in the manner of the Long-tailed Tit, differing in this respect, that you will occasionally find them congregated in large flocks, more particularly during the month of October, when they are migrating from their breeding-places." "To the above interesting account," says Mr. Gould, "we may add that they are to be met with occasionally on the banks of the Thames; from the thick reed-beds of Erith, in Kent, throughout the course of the river to Oxford; but their visits are by no means regular, or to be calculated on with accuracy."

A contributor to Mr. Loudon's magazine saw a flock of eight or ten of these beautiful little creatures on the wing, in a large piece of reeds near Barking Creek, Essex. "They were just topping the reeds in their flight, and uttering in full chorus their sweetly musical note, which may be compared to the sound of very small cymbals; it is clear and ringing, though soft, and corresponds well with the delicacy and beauty of the form and colour of the birds. Several flocks were seen during the same morning. Their flight was short and low, only sufficient to clear the reeds, on the seedy tops of which, like most of their tribe, they alighted to feed, with the head or back downwards. If disturbed, they immediately descend by running, or, rather, by dropping to the bottom of the stem, where they creep and flit, perfectly concealed from view by the closeness of the covert and the resembling tints of their plumage."

The LONG-TAILED TITS (*Orites*) have a short, compact body; long, graduated tail, incised at the centre of its extremity; moderate-sized wings, in which the fourth and fifth quills exceed the rest in length; a very short, much arched, and pointed beak; and delicate feet. The sexes are alike in colour, and the young differ but slightly from their parents.

THE LONG-TAILED TITMOUSE.

The LONG-TAILED TITMOUSE (*Orites caudatus*) is black on the centre of the back and white on the head; the under side is reddish white, and the wings black, their hinder quills being broadly bordered with white; the tail is black, the three outer feathers spotted with white. The young are pale black on the side of the head, back, and wings, and of a whitish hue on the top of the head and on the under side of the body. The eye is dark brown in the adults, its unfeathered margin is light red, in the young bright yellow. The beak and feet are black. This species is six inches long and seven inches and three-quarters broad; the wing measures two inches and a half, and the tail three inches and a half.

The Long-tailed Tit inhabits the whole of Europe, from its most northern countries as far south as the Pyrenees and Alps, but is met with comparatively rarely in Greece and Spain. Like some of its congeners, it prefers taking up its abode on fir and pine trees, but, if these are not attainable, usually frequents orchards or well-cultivated woodland districts; its habits are social, and its disposition, though equally lively and active, considerably more peaceful than that of most other members of its family. Both sexes utter a brisk chirping note, and the male at some seasons a faint twittering song. These birds destroy the smallest kinds of insects in enormous quantities, and thus render inestimable service to the farmer and gardener.

"The nest of this species," says Mudie, "has always been admired as a model of neatness and warmth. It is formed by patient and incessant labours of both birds for at least a month, if materials are abundant, and five or six weeks when the supply is more scanty. It is placed in the fork of a small mossy tree, or among the thick twigs of a shrub, often a hawthorn, sometimes an evergreen, seldom more than three or four feet from the ground, and generally within cover of the sprays. Its form resembles that of an egg placed on the broader end; in appearance and texture it is very like a short decayed stump, that has been coated over with lichens, and is as firm in texture as it is neat and regular in form. The main fabric is closely made of moss, taken in very small pieces, and matted together with animal fibre, rarely with wool—as the bird does not range so far from the bushes as to be much of a wool-gatherer—but principally with what may be called tree or bark silk, that is, the silken cocoons that cover the chrysalides of insects and the eggs of spiders. These materials are firmly interwoven, but, though the term is sometimes applied to them, they are not *felted*. The two materials form a stronger fabric than could be made of either of them singly. The moss gives bulk and stiffness, and the silky filaments cohesion; and, as the birds are microscopic in their vision, they have perfect command over their short bills, and apply these materials by very small portions at a time. The fabric is beautifully put together, and when there are twigs in the way the nest is so closely worked upon them that it cannot be removed entire unless they are taken along with it. Externally it is coated with lichens and liverworts, so closely worked in that not a bit falls off; the inside is carefully lined with feathers, the quills of which are worked into the fabric. The whole nest, dome and all, is lined in this manner, so that when finished it is secure against rain and change of temperature. The entrance is by an aperture in the side, towards the top of the structure, and there are in some instances two apertures, the one nearly opposite to the other, the feathers around which are so worked into the fabric as, when not pushed aside by the birds, to form a sort of curtain. The interior is usually of sufficient size to contain both birds during the night, and, in the case of there being two apertures, they sit with the head of the male out at the one and the tail of the female out at the other, so that both apertures are partially closed, and the male is ready to start out as soon as there is light enough for hunting." The first brood is produced by the end of April, and usually consists of from nine to twelve or occasionally fifteen eggs; these are very small, with delicate white shells, more or less spotted with pale red; many females lay eggs that are quite white. The young are hatched thirteen days after their birth, and during all that time the brooding mother must suffer considerable annoyance from the unwieldy size of her tail, which is generally kept twisted round in the most inconvenient manner: nor are the young more at their ease; at first, despite their numbers, they manage tolerably well, but as they increase in size each struggles for the warmest place, and pushes at his neighbour until the nest gives way, or is rent in such a manner that the troublesome tail can be thrust out and freer space obtained.

THE CRESTED TITS (*Lophophanes*) are distinguished by comparatively slender beaks and the pointed upright crest that adorns the head. India and America have species similar to those we are about to describe.

THE CRESTED TIT.

THE CRESTED TIT (*Lophophanes cristatus*) is mouse-coloured on the upper portion of the body, and greyish white on the under side; the slender graduated feathers that form the crest, the shafts of which incline forward, are black edged with white; the region of the cheek is white; a sickle-shaped stripe across the eyes is black, as is also a line commencing at the nape and extending to the tail; the quills and tail-feathers are dark greyish brown, with light edges. The eye is brown, the beak black, with pale margins, and the feet dirty light blue. The length of the body is five and its breadth eight inches; the female is somewhat smaller than her mate. The crest of the young birds is not quite so large, and the markings on their head more indistinct.

The Crested Tits are spread over Central Europe and North-western Asia, where they principally frequent fir and pine forests, remaining almost throughout the entire year in their native woods, only leaving their shelter for a short time in the spring and autumn. During the winter they associate freely with other species, and in their company fly about in search of food. The song of the male is chirping and insignificant, and during the breeding season is accompanied by a great variety of gesticulation, and a constant display of the crest that adorns his head. The nests are always placed in holes of trees, such as have a narrow entrance being preferred, and are situated at various heights from the ground, in some instances in the deserted dwellings of other birds or of squirrels; the exterior is formed of bits of moss, or some similar material, and lined with hair or wool of various kinds. The eggs, eight to ten in number, are small and delicate, and of snowy white, spotted with rust-red; both parents brood, and the young are hatched within a fortnight, and are reared on small caterpillars. As soon as they are able to support themselves, the old pair at once make preparations for a second family.

THE LONG-TAILED TITMOUSE (*Orites caudatus*).

Although rare in Great Britain, this species is abundant in all the northern regions of Europe, frequenting places where juniper trees are plentiful; it is common in Germany and the Alpine districts, and is scarce in Holland.

Colonel Montague says, "It is not uncommon amongst the large tracts of pines in the north of Scotland, particularly in the forest of Glenmore, the property of the Duke of Gordon, from whence we have seen it," and Sir William Jardine states that "this bird has been found in some plantations not far distant from Glasgow, where it annually breeds."

It feeds on insects, berries, and the seeds of evergreens, and, according to M. Temminck, builds in holes in trees, or walls.

THE TOUPET TIT.

The Toupet Tit (*Parus bicolor*) is remarkable by the tuft or toupet on its head. In this very pretty bird the sexes are so much alike as to be scarcely distinguishable; both may be described as having the forehead black, the sides of the head brownish black; all the upper surface uniform grey, under surface greyish white, tinged with yellowish brown on the flanks; bill black, irides dark brown, feet lead-colour.

There can be no doubt that the northern regions of America form the true habitat of this species; but as specimens have been undoubtedly killed in Russia, it may be classed among the occasional visitors to the European continent; nevertheless, it is exceedingly rare in Europe, and its presence is confined to the regions adjacent to the Arctic circle. In the works of Wilson and Audubon its manners are described as resembling those of other members of the genus. "It moves along the branches," says the latter, "searches in the chinks, flies to the end of the twigs, and hangs to them by its feet, whilst the bill is engaged in detaching a beech or hazel-nut, an acorn, or a chinquapin, upon all of which it feeds, removing them to a large branch, where, having secured them in a crevice, it holds them by both feet, and breaks the shell by repeated blows of its beak. It resorts to the margins of brooks to drink, and, when unable to do so, obtains water by stooping from the extremity of a twig overhanging the stream. It appears to prefer this latter method, and is also fond of drinking the drops of rain or dew, as they hang at the extremity of the branches." The same author also informs us that its notes, which are usually loud and mellow, are rather unmusical than otherwise; that it is somewhat vicious in its disposition, and occasionally attacks and destroys smaller birds by repeated blows on the head, until it breaks the skull.

The nest is constructed of all kinds of warm materials, and is generally placed in the holes formed by the Downy Woodpecker, or of other Woodpeckers, but it is occasionally placed in a hole dug by the bird itself for that purpose. The eggs, six or eight in number, are pure white, with a few red spots at the larger end.

The WOOD TITS (*Parus*) differ from the species above described by the unusual strength of their conical beak, which is compressed at its sides and pointed at its tip, and by their large, stout claws. The wings, in which the third and fourth quills exceed the rest in length, are short and broad; the tail is long, or of medium size, and either slightly rounded or incised at its extremity. The rich streaming plumage is often brilliantly coloured. The young resemble the mother; little diversity, however, is observable between the sexes.

THE GREAT TIT.

The Great Tit (*Parus major*) is olive green on the upper part of its body, and pale yellow beneath; the top of the head, the throat, a stripe that passes along the body, and another extending from the front of the throat to the back of the head, are black; the quills and tail are bluish grey, and the sides of the head and a stripe on the wings white. The eye is dark brown, the beak black, and the foot lead-grey. In the young all the tints are somewhat paler. This species is five inches and three-quarters long and nine inches broad; the wing measures two inches and three-quarters, and the tail two inches and a half. The female is a trifle smaller than her mate. This common Tit is found throughout Europe from sixty-five degrees north latitude (in the southern part it is comparatively rarer), and in the whole of Central Asia, and North-western Africa. Unlike the species above described, these birds have no especial predilection for forests, but constantly occupy woods, shrubberies, and gardens, and not unfrequently farm-yards, where they are found to grow very bold in their endeavours to obtain subsistence.

The summer food of the Great Tit consists of insects, together with the buds of trees and fruits, to these it adds the crumbs scattered from the cottage door, of whatever matters they chance to consist, whether animal or vegetable, its digestive powers being apparently adapted to great variety. On the approach of spring it becomes noisy and restless, betaking itself to the top branches of high trees, where it utters its harsh note for the day together; the note greatly resembles the noise made by filing a saw, or the creaking of a gate on rusty hinges. The song of this bird, which is composed of three distinct notes, would be agreeable were it not for the introduction of occasional harsh grating tones, as they hop nimbly about the branches in search of food. During the breeding season the performance is somewhat more pleasing, and the voice is in many respects not unlike that of the Chaffinch.

"The Great Tit," says Mr. Yarrell, "will frequently kill small birds, accomplishing his purpose by repeated blows with his sharp beak on the skull of the victim, and afterwards picking out and eating the brains. Though more truly a feeder on insects, the Great Tit, unlike insectivorous birds in general, does not migrate, but remains all the year round in the same district, apparently unaffected by the very different temperature of Italy as compared with Russia, and the species is known to be constantly resident in both countries. In England the Great Tit is seldom seen on bleak open ground, but inhabits woods, the vicinity of gardens, or other enclosed and sheltered situations in summer, where it occasionally feeds on small seeds. In winter it approaches nearer the habitations of men, and may be seen in hard weather closely examining the thatch of old buildings in search of the many small flies that harbour there. As the Great Tit is an early breeder, the lively chirping notes of the males are heard early in February; sometimes this bird produces a sound which has been considered to resemble the noise made in sharpening a saw; and, though this is small praise, his notes are more remarkable for vivacity and frequent repetition than for quality of tone. The nest, formed of moss and lined with hair and feathers, is usually placed in the hollow of a tree, or a hole in a wall. The deserted nest of a Crow or Magpie is sometimes chosen. Several observers have recorded the partiality so frequently evinced by this species to build its nest in or about any old unused wooden pump, and the mass of materials collected on such occasions wherewith to construct it. The eggs are from six to nine in number, nine lines and a half in length and seven lines in breadth; white, spotted and speckled with pale red."

"Rusticus," of Godalming, has given an amusing account of the behaviour of one of this species which came under his observation:—"The next object of attention was a Titmouse of the large black-headed kind, swinging himself about like a rope-dancer, and whistling out his sing-song just like a fellow sharpening a saw. To my surprise the gentleman entered an old Magpie's nest, to which I had paid frequent friendly visits during the previous spring; he immediately came out again and jumped about, sharpening his saw as before. One might almost as well handle a hedgehog as a Magpie's nest; in this instance some cuttings of gooseberry bushes, skilfully woven into an arch above it, rendered it rather more untempting than usual. I was meditating how to commence the attack, when another Tit flew out in a great choler, and rated me as though I had already robbed her. After a good deal of trouble, during which the slender fir-top was swinging about with me in the breeze, I succeeded in obtaining a peep into the nest; there was nest within nest, the cosiest, softest, warmest little nest, with eight delicately speckled eggs at the bottom of the Magpie's more spacious habitation. I declined meddling with them."

THE SOMBRE TIT.

The SOMBRE TIT (*Parus lugubris*).—"This bird," says Mr. Gould, "does not approach the British Islands, nor even the more temperate parts of the European Continent. Its habitat is almost restricted to the European confines of the Asiatic border; it has, however, never been observed in Austria, or any part of Germany, although pretty common in Dalmatia. The male and female are alike in plumage, and may be thus described:—The whole of the upper surface is of a brownish ash-colour, becoming deeper on the top of the head; the secondaries and tail-feathers are slightly margined with white; throat brownish black; the cheeks and the whole of the under surface white, slightly tinted with brownish grey; beak and feet lead-colour."

THE COLE TIT.

The COLE TIT (*Parus ater*).—The head, neck, and upper breast are black; the cheeks and nape white. The length of the bird is four inches and a half, its breadth seven inches. The bill is black, the irides hazel, the legs are lead-grey; the upper part of the plumage is greyish, the belly yellowish white. The covers of the secondaries and those above are tipped with white, forming two bars across the wing. In the female the white on the cheeks is less extended.

This species is generally spread over the continent of Europe, and is almost as frequent in Great Britain as the Great Tit or the Blue Tit. It has been considered by some naturalists to be identical with the Marsh Tit, but may at once be distinguished from that bird by the white patch on the nape of the neck, and the white spots on the wing-covers, which are not to be found on the Marsh Tit at any age. The Cole Tit frequents woods and plantations, especially those in which oak, birch, and fir trees are numerous, and may be seen in company with other birds of similar habits, roving from tree to tree in search of the small insects and seeds on which they subsist. "In the pine forests of the Dee and Spey," says Macgillivray, "where very few birds are met with, it is pleasant to follow a troop of these tiny creatures, as they search the tree-tops, spreading all round, fluttering and creeping among the branches, ever in motion, now clinging to a twig in an inverted position, now hovering over a tuft of leaves, picking in a crevice of the bark, searching all the boughs, sometimes visiting the lowermost, and again winding among those at the very tops of the trees. In wandering among these woods you are attracted by their shrill, *chirping* notes, which they continually emit as they flutter among the branches." "In woodlands," says Mr. Hepburn, "it is common to see it hopping along the grounds, and uttering its harsh notes, 'If hee!' 'if hee!' It delights to examine a ditch that has just been cleaned out. I have seen it pull small earthworms to pieces and devour them."

"It is a matter of curious inquiry," says Gilbert White, "to trace out how those species of soft-billed birds that continue with us the winter through, subsist during the dead months. The imbecility of birds seems not to be the only reason why they shun the rigour of our winters, for the robust Wry-neck (so much resembling the hardy race of Woodpeckers) migrates, while the feeble little Golden-crested Wren, that shadow of a bird, braves our severest frosts without availing himself of houses or villages, to which most of our birds crowd in distressful seasons, while he keeps aloof in fields and woods; but perhaps this may be the reason why they often perish, and why they are almost as rare as any bird we know.

"I have no reason to doubt but that the soft-billed birds which winter with us subsist chiefly on insects in their chrysalis state. All the species of Wagtails in severe weather haunt shallow streams, near their spring-heads, where they never freeze; and, by wading, pick out the chrysalis of the genus of *Phryganeæ*.

"Hedge Sparrows frequent sinks and gutters in hard weather, where they pick up crumbs and other sweepings, and in mild weather they procure worms, which are stirring every month in the year, as any one may see that will only be at the trouble of taking a candle to a grass-plot on any mild winter's night. Redbreasts and Wrens in the winter haunt outhouses, stables, and barns, where they find spiders and flies, that have laid themselves up during the cold season. But the grand support of the soft-billed birds in the winter is that infinite profusion of chrysalids of the *Lepidoptera ordo*, which is fastened to the twigs of trees and their trunks, to the poles and walls of gardens and buildings, and is found in every cranny and cleft of rock or rubbish, and even in the ground itself.

"Every species of Titmouse winters with us. They have," continues our author, "what I call an intermediate bill, between the hard and the soft, between the Linnæan genera of *Fringilla* and *Motacilla*. One species alone spends its whole time in the woods and fields, never retreating for succour, in the severest seasons, to houses and neighbourhoods, and that is the delicate Long-tailed Titmouse, which is almost as minute as the Golden-crowned Wren, but the Blue Titmouse or Nun (*Parus cœruleus*), the Cole Mouse (*Parus ater*), the Great Black-headed Titmouse (*Fringillago*), and the Marsh Titmouse (*Parus palustris*), all resort at times to buildings, and in hard weather particularly. The Great Titmouse, driven by stress of weather, much frequents houses, and in deep snows I have seen this bird, while it hung with its back downwards (to my no small delight and admiration) draw straws lengthwise from out the eaves of thatched houses, in order to pull out the flies that were concealed between them, and that in such numbers that they quite defaced the thatch, and gave it a ragged appearance.

"The Blue Titmouse, or Nun, is a great frequenter of houses, and a general devourer. Besides insects, it is very fond of flesh, for it frequently picks bones on dunghills. It is a vast admirer of suet, and haunts butchers' shops. It will also pick holes in apples left on the ground, and be well entertained with the seeds on the head of a sunflower. The Blue Marsh and Great Titmice will, in very severe weather, carry away barley and oat-straws from the sides of ricks.

"How the Wheat-ear and Whin-chat support themselves in winter cannot be so easily ascertained, since they spend their time on wild heaths and warrens, the former especially where there are stone-quarries. Most probable it is that their maintenance arises from the aurelia of the *Lepidoptera ordo*, which furnish them with a plentiful table in the wilderness."

"That some guess may be formed of the possible extent of good or evil occasioned by small birds," says Bishop Stanley, "we annex the result of our own observations on the precise quantity of food consumed by certain species, either for their own support or that of their young, remarking at the same time that the difference observed in the instances may be partly accounted for by the different quantity of food required by young birds at different periods of their growth.

"Sparrows feed their young thirty-six times in an hour, which, calculating at the rate of fourteen hours a day, in the long days of spring and summer, gives 3,500 times per week, a number corroborated on the authority of another writer, who calculated the number of caterpillars destroyed in a week to be about 3,400.

"Redstarts were observed to feed their young with little green grubs from gooseberry-trees twenty-three times in an hour, which, at the same calculation, amounts to 2,254 times in a week; but more grubs than one were usually imported each time.

"Chaffinches at the rate of about thirty-five times an hour for five or six times together, when they would pause, and not return for intervals of eight or ten minutes; the food was green caterpillars.

"The Titmouse sixteen times in an hour.

"The comparative weight consumed was as follows :—

"A Greenfinch, provided with eighty grains by weight of wheat, in twenty-four hours consumed seventy-nine; but of a thick paste, made of flour, eggs, &c., it consumed upwards of one hundred grains.

"A Goldfinch consumed about ninety grains of Canary seed in twenty-four hours.

THE GREAT TIT (*Parus major*).

"Sixteen Canaries consumed at the average rate of one hundred grains each in twenty-four hours.

"The consumption of food by these birds, compared with the weight of their bodies, was about one-sixth; which, supposing a man to consume food in the same proportion to his weight, would amount to about twenty-five pounds for every twenty-four hours."

The nest, which is formed of moss and wool, lined with hair, is placed in a hole in a wall, or the hollow of a tree, or sometimes on the ground, in cavities among the exposed roots, at the mouth of some burrow. The eggs are from six to eight in number, and are white, spotted with pale red.

The BLUE TITS represent a group that have been separated from those mentioned above on account of the unusual shortness of their much-curved beak and the peculiar coloration of their plumage.

THE BLUE TIT.

The Blue Tit (*Parus cæruleus*) is bluish green on the back, and blue on the head, wings, and tail, while the under side is yellow; a white line passes from the brow to the nape, and a narrow bluish black line divides the white cheeks from the dark head; the throat is encircled by a blue band; the quills are slate-black, the hinder ones sky-blue on the outer web and white at the tip; the tail-feathers are greyish blue. The eye is dark brown, the beak black, with white margins, and the foot lead-grey. The female is less beautifully coloured than her mate, and the young somewhat paler. This species is four inches and a half long and seven and a half broad; the wing measures two inches and a third, and the tail about two inches.

The Blue Tits are met with over a greater extent of country than any other member of their family. In Europe they are dispersed over the entire continent, from its most northern latitude to the extreme south; in Northern Africa and Eastern Asia they are replaced by a very similar species. In Great Britain, where they are extremely common, they frequent gardens, groves, or orchards, and have been popularly supposed to do considerable damage by pecking at the buds of fruit trees; it is much more likely, however, that these active little visitants to our orchards, when they seem thus employed, are busily engaged in rendering us an important service, by clearing off the insects and grubs that infest the blossoms sometimes in such large numbers as would seriously injure the crops. "This species," says Mudie, "is perhaps more incessant than any other bird in hunting the buds and branches of trees, especially of fruit trees near houses, for its insect prey; but it will eat any animal matter either in a recent or putrid state, and it appears to scent animal remains at a considerable distance, as it hovers about slaughter-houses, dog-kennels, and other places where there are scraps of carrion. It also haunts the neighbourhood of houses, and picks bones, eats bits of fat, or any refuse it can find, and, when opportunity favours, will even kill other birds by striking them on the head, and then picks their bones as clean as if they were cleared by the thousand inhabitants of an ant-hill. Dead birds are, of course, lawful prize, for which it searches under trees and hedges after severe weather. It is, in short, a very omnivorous bird, and plays the scavenger with equal diligence and grace. It is also very bold and familiar, and will alight among the poultry in the farm-yard or amid the dogs in the kennel; nor does it much heed the presence of people even under the trees upon which it is hunting." So strong is the liking of the Blue Tit for fat, that Gilbert White tells us that he has known as many as twenty caught in one morning with a common snap mouse-trap, baited with tallow or suet.

"When the Blue Tit," says Yarrell, "has taken possession of a hole in a wall or decayed tree, she is not readily induced to quit it, but defends her nest and eggs with great courage and perseverance, puffing out her feathers and hissing like an angry kitten; in some counties, indeed, she goes by the name of 'Billy Biter' among bird-nesting boys, from a vivid remembrance of certain impressions on their fingers. A female that had taken possession of a small wooden box hung up against an out-building, into which she had carried abundance of material for her nest, and in the midst of which she was then sitting upon her numerous eggs, allowed herself to be carried into a house for examination, and when the box was replaced in its former situation, did not desert her eggs, but hatched them and reared her young."

The nest is generally built in a hole in some tree, in many instances excavated by the building birds themselves; and frequent and fierce are the battles that take place between the different couples, relative to the possession of a particularly desirable spot. Within this cavity, a comfortable bed of hair, moss, or feathers is arranged for the reception of the eggs, eight or ten in number, which are white, with spots of rust-red, and about seven lines and a half long, and six in diameter.

Sometimes this bird selects very whimsical situations for a nest. Bishop Stanley, in his "Familiar History of Birds," relates that "A pair of Titmice (*Parus cœruleus*) built their nest in the upper part of an old pump, fixing it on the pin on which the handle worked. It happened that during the time of building and laying the eggs the pump had not been in use; when again set going the female was sitting, and it was naturally supposed that the motion of the pump-handle would drive her away. The young brood were, however, hatched safely, without any other misfortune than the loss of a part of the tail of the sitting bird, which was rubbed off by the friction of the pump-handle. The opening for a pump-handle seems, indeed, to be a favourite spot, notwithstanding its danger, as we knew of another pair of Titmice, who for several days persevered in inserting, close upon the point of the handle, the materials for a nest, though every time the handle was raised they were either crushed or forced out, till the patience of the persevering little builders was fairly exhausted."

In the "Journal of a Naturalist" is the following interesting notice of the Blue Tit:—"I was lately exceedingly pleased in witnessing the maternal care and intelligence of this bird; the poor thing had its young ones in the hole of a wall, and the nest had been nearly all drawn out of the crevice by the paw of a cat, and part of its brood devoured. In re-visiting its home the bird discovered some of its nestlings still alive, though wrapped up and hidden in the tangled moss and feathers of their bed, and it then drew the whole of the nest back into the place from whence it had been taken, unrolled and re-settled the remaining little ones, fed them with the usual attentions, and finally succeeded in rearing them. The parents of even this reduced family laboured with great perseverance to supply the wants of their progeny, one or other of them bringing a grub, caterpillar, or some insect, at intervals of less than a minute during the day, and probably in the earlier part of the morning more frequently. Now if we allow that they brought food to the hole every minute for fourteen hours, and provided for their own wants also, it will admit, perhaps, a total of a thousand grubs a day for the requirements of one, and that a diminished brood, and afford some adequate comprehension of the infinite number requisite for the summer nutriment of our soft-billed birds, and the great distances gone over by such as have young ones, in their numerous trips from hedge to tree in the hours specified when they have full broods to support."

"In winter," says Macgillivray, "the Blue Tit may be occasionally seen about the farm yard, where it finds, when other food fails, a supply of oat or wheat seeds, which it jerks from their husks with its wedge-like bill. It also frequents the doors and dunghills, to pick up a bit of suet, or nibble a morsel of flesh; and where carrion is kept, it is often seen to help itself to a share. Often, at this season too, you may find it clinging to a wall, and digging at the loose plaster, to get at the insects or pupæ concealed behind. It will even make occasional excursions into the stubble near hedges or woods; and, in short, being in a manner omnivorous, it manages to get through the cold part of the year as well as its neighbours. It is accused of attacking other small birds, and splitting their skulls, but I have neither seen it do so, nor met with any other person who has; and we know how, when any assertion of the kind, however incredible, has been made, all the ornithologists catch the cry. It reposes in holes in walls, or among ivy, and seems to suffer less in severe frosts than most birds."

The song of the Blue Tits is a most insignificant performance, and their call-note a single shrill chirp. In other respects, however, they are in no respect inferior to other members of their family. In disposition they are lively, bold, and adventurous, and, were they a little larger, would probably assail enemies twice their own size, at whom they can, as it is, only ruffle up their feathers, and express, by vehement pecks and gesticulations, the pugnacious inclinations they cannot otherwise indulge. During the spring they live in pairs, in the summer in families, and in autumn associate in large flocks before commencing their winter excursions. Naumann tells us that previous to setting forth, these flocks assemble upon the tops of trees, calling incessantly to one another, as though each wished to induce its companions to set the example by commencing the unwonted flight. One after another rises into the air and makes a start, but finding that the rest have not resolution to follow, at once returns to his former perch, until at last all take flight simultaneously; but even when once fairly off, a mere trifle, such as a hat thrown upwards, will often cause them to drop heavily and precipitately to the ground. This unusual behaviour proceeds from the terror with which they regard the approach of any bird of prey, as they are well aware that in flying over any open country their inferior powers of wing place them completely at the mercy of such assailants. For this reason, when journeying to any distance, the flocks of Blue Tits usually rise to a great height before proceding on their perilous journey.

THE AZURE TIT.

The Azure Tit (*Parus cyaneus*) is considerably larger than the last-mentioned species. The upper part of the body is light blue, the head and under side are white, the nape and wings deep blue, the latter adorned with a broad white band, and tipped with white; the eye is dark brown, the beak greyish black, and the foot lead-grey. This species is from five inches and a quarter to six inches long, and nine and a half broad. The Azure Tit is spread over the eastern part of Siberia, and from thence wanders annually over some portions of Europe.

"This beautiful Tit," says Mr. Gould, "is a native of Siberia, whence it frequently strays into the northern parts of Europe, such as Russia and Poland, and it has been known to penetrate as far south as Germany. Like the rest of its family it dwells in woods and forests, generally in the most retired parts; it, therefore, is not to be wondered at that its history is shrouded in obscurity, when we consider how little intercourse naturalists have had with the remote countries that it inhabits. Like the rest of its race, the sexes of the Azure Tit offer little or no difference in the colour of the plumage. Nothing is known respecting nest or eggs.'

THE SIBERIAN TIT.

The Siberian Tit (*Parus Sibericus*) is, like the last-mentioned species, an inhabitant of the most northern parts of Europe and Asia. The upper surface of this bird is of a deep ash-colour, tinged on the back with brown; the quills, secondaries, and tail-feathers edged with white; throat black; cheeks and upper part of the chest pure white; under parts greyish white, washed with rufous on the flanks; bill and tarsi lead-colour.

The Siberian Tit is exceedingly rare in Europe. It migrates in winter to some of the provinces of Russia, and has been found in Sweden.

Mr. Lloyd informs us that it is plentiful in Lapland; that the greater portion are stationary all the year round; and that at Mauno, in latitude 68° 35', it is almost the only bird to be found during the winter.

"The Siberian Titmouse," says M. Malm, "is not only most fearless, but possessed of an extraordinary degree of curiosity, and I have often had the greatest enjoyment in watching its movements. On one occasion I stood for half an hour under a thick spruce pine tree, on the look-out for one of these birds, which I heard chattering in the branches above me, but without being able to get sight of it. At length, however, it left its perch on the top of the tree, and, to my great astonishment, as I was still standing at the foot of the same tree, with the gun under my arm, it descended with the rapidity of an arrow, and took post on the barrel, near the muzzle! Here it remained a long while, and it was not till I had driven it away with my hand that I was enabled to shoot it.

"On another occasion, when out for the purpose of shooting, my gun being charged with large shot, I met with a Siberian Titmouse; and, whilst occupied in changing the shot, it came so very near me that I was enabled, without difficulty, to knock it down with the ramrod of my gun. This bird makes its nest in a hollow pine tree. The under portion of it consists of moss, which, without any kind of arrangement, is stuffed into the hole. Above this again, is a good portion of the hair of the lemming; at times, indeed, pieces of the skin of that animal. The eggs, which are from seven to nine in number, are white, and marked with light red spots and blotches. In shape they resemble those of the Common Creeper."

THE MARSH TIT.

The MARSH TIT (*Parus palustris*) is of a reddish grey on the upper part of the body, and greyish white beneath; the head, as far as the nape, is deep black, the chin greyish black, and the region of the chest white. The eye is dark brown, the beak black, and the foot lead-grey. The body is four inches and a half long, and the span of the wings eight inches; the wing measures two inches and a half, and the tail two inches.

The Marsh Tit inhabits the central portions of Europe. In the extreme south and north it is replaced by nearly allied species. Everywhere this bird frequents marshy localities, low-lying meadows, and moist woodland districts, preferring clumps of bushes or willows to lofty trees. Such as inhabit Great Britain remain throughout the entire year, but those occupying more northern latitudes wander farther south at the approach of winter.

Mr. Yarrell informs us that the Marsh Tit is common about London, and with the Blue, Cole, Long-tailed, and Great Tits, has been observed in Kensington Gardens, and that these birds are probably attracted to this spot by the insect food to be found about old trees in various stages of decay, a London atmosphere being unfavourable to healthy vegetation.

"The Marsh Tit," he tells us, "from London westward may be traced to Cornwall and Wales." In Ireland, according to Mr. Thompson, this bird has been killed in the Phœnix Park near Dublin, in the county of Kildare, in the vicinity of Belfast, and in the county of Donegal; from London northward through Essex, Suffolk, Norfolk, and Lincolnshire." It is also abundant in Derbyshire and Yorkshire; it is found in Durham and Northumberland; and Mr. Macgillivray saw it near Edinburgh. In his work on "British Birds" he says:—"This species is not nearly so common in the southern districts of Scotland as the Cole Tit, and I am not aware of its having been met with farther north than Fifeshire. Although named the Marsh Tit, it does not confine itself to marshy places, but examines the trees and bushes growing in the driest soil, as well as those of swampy ground; and I have seen it alight on herbaceous plants, especially thistles. Its flight is rapid and undulated, all its motions are quick and abrupt, and it creeps along the twigs, flutters, and throws itself into all sorts of positions. Its food consists chiefly of insects, but in autumn and winter it also eats the seeds of various syngenesian and other plants, and will pick at the flesh of a dead animal. It remains all the year with us, and does not seem to shift its quarters much. Its ordinary cry is a shrill *cheep*, but it also emits a variety of chattering notes, and in spring has a kind of song, which may be expressed by the syllables 'Chicka, chicka, chee!' Towards the end of the season the little flocks disperse, separate from the individuals of other species with which they have associated in winter, and betake themselves to the dense woods, or to the marshy wooded borders of streams and pools, the chief attraction to which seems to be the decayed willows, of which the crevices afford an abundant supply of insect food."

Montague remarks that "the eggs of all the species of Titmouse whose eggs are known are similar in colour, and only to be distinguished from each other by size and weight. Those of the Nuthatch, Creeper, Wren, Yellow Wren, Wood Wren, and Chiffchaff all agree in their markings, and are so like those of the Titmice that it is scarcely possible to separate them with certainty if once mixed together. It is somewhat remarkable that all these birds breed in holes, or make a covered nest."

The nest is usually built in hollow trees, the decayed parts of which, as Colonel Montague informs us, it excavates artfully, carrying the chips in its bill to some distance. It always works downwards, and makes the bottom of its excavation, intended for the reception of the nest, larger than the entrance. The nest itself is compactly formed of moss and wool, lined with the soft seed-down of the willow.

The first brood consists of from eight to twelve, and the second of from six to nine eggs. These are seven lines and a half long, and six broad. The shell is white, spotted with red.

THE CAROLINA TITMOUSE.

The Carolina Titmouse (*Parus Carolinensis*), an American species, has the bill black, the iris dark brown, and the feet bluish grey. The whole upper part of the head and the hind neck are pure black, as is a large patch on the throat and fore neck. Between these patches of black there is a band of greyish white from the base of the bill down the side of the neck, becoming broader and greyer behind. The back and wing-coverts are ash-grey, tinged with brown; quills brown, margined with greyish blue, as is the tail, which is more tinged with grey; lower parts greyish white, tinged with brown; the sides more deeply tinted. The length of this bird is four inches and a half, extent of wings six inches. The female is similar to the male, but somewhat fainter in its tints.

The Carolina Titmouse is a constant inhabitant of the Southern States of North America, extending from the lower parts of Louisiana through the Floridas, as far as the borders of the Roanoke River, reaching eastward as far as the State of New Jersey. In general it is found only in the immediate vicinity of ponds and deep marshy and moist swamps; it is rarely seen during the winter in greater numbers than one pair together, and frequently singly, whereas the Black-cap Titmouse, which this species much resembles, moves in flocks during the whole winter, frequenting orchards, gardens, or the hedges and trees along the roads, entering the villages, and coming to the wood piles of the farmers, whereas the Southern species is never met with in such places at any time of the year, and is at all seasons a shyer bird. The Carolina Titmouse breeds in the holes abandoned by the Brown-headed Nuthatch, but we are as yet not well informed concerning either its eggs or its nest.

THE BLACK-CAP TITMOUSE.

The Black-cap Titmouse (*Parus atricapillus*), likewise an American species, has the bill brownish black, the iris dark brown, and the feet greyish blue, as are the claws. The whole upper part of the head and hind neck are pure black, as is a large patch on the throat and fore neck. Between these patches of black is a band of pure white, from the base of the bill down the sides of the neck, becoming broader behind, and encroaching on the back, which, with the wing-coverts, is ash-grey, tinged with brown. The quills are dark greyish brown, margined with bluish white, the secondaries being so broadly margined as to leave a conspicuous white dash on the wing. Tail same as wings, and the feathers similarly edged; lower parts brownish white, the sides pale yellowish brown. Length of body, five inches and a half; length of wing, three inches and seven-eighths. The female is similar to the male.

The opinion generally entertained concerning the extensive range of the Black-cap Titmouse has, in all probability, arisen from its great similarity to the species last described. In reality the Black-cap is rarely observed further south than the middle portions of Maryland; westward of the Alleghanies it extends as far as Kentucky in winter, but at the approach of spring returns northward.

Hardy, smart, restless, industrious, and frugal, the Black-cap Titmouse ranges through the forest during the summer, and retiring to its more secluded parts, as if to ensure a greater degree of quiet, it usually breeds there. Its numerous eggs produce a numerous progeny, and as soon as the first brood has been reared the young range hither and thither in a body, searching for food, while their parents, intent on rearing another family, remain concealed and almost silent, laying their eggs in the hole deserted by some Woodpecker, or forming one for themselves. "As it has been my fortune," says Audubon, "to witness a pair at this work, I will state what occurred, notwithstanding the opinion of those who tell us that the bill of a Titmouse is 'not shaped for digging.' While seated one morning under a crab apple-tree (very hard wood), I saw two Black-cap Titmice fluttering about in great concern, as if anxious to see me depart. By their manners I was induced to believe their nest was near, and, anxious to observe their proceedings, I removed to the distance of about twenty paces. The birds now became silent, alighted on the apple-tree, gradually moved towards the base of one of its large branches, and one of them disappeared, in what I then supposed to be the hole of a small Woodpecker, but I saw it presently on the edge with a small chip in its bill, and again cautiously approached the tree. When three or four yards off I distinctly heard the peckings or tappings of the industrious worker within, and saw it come to the mouth of the hole and return many times in succession in the course of half an hour, after which I got up and examined the mansion. The hole was about three inches deep, and dug obliquely downward from the aperture, which was just large enough to admit the bird. I had observed both sexes at this labour, and left the spot perfectly satisfied as to their power of boring a nest for themselves."

"The Black-cap Titmouse, or Chickadee, as it is generally named in our Eastern States, though exceedingly shy in summer, or during the breeding season, becomes quite familiar in winter, although it never ventures to enter the habitations of man; but in the most boisterous weather requiring neither food nor shelter there, it may be seen amidst the snow, in the rugged paths of the cheerless woods, where it welcomes the traveller or woodcutter with a confidence and cheerfulness far surpassing the well-known familiarity of the Robin Redbreast of Europe. Often, on such occasions, should you offer it, no matter how small a portion of your fare, it alights without hesitation, and devours it without manifesting any apprehension. The sound of an axe in the woods is sufficient to bring forth several of these busy creatures, and, having discovered the woodman, they seem to find pleasure in his company. If, as is usually the case, he is provided with a dinner, the Chickadee at once evinces its anxiety to partake of it, and loses no opportunity of accomplishing its object, although it sets about it with much circumspection, as if afraid of being detected and brought to punishment. "A woodcutter in Maine assured me," continues Audubon, "that one day he happened to be at work, and had scarcely hung up his basket of provisions, when it was observed by a flock of these birds, which, having gathered into it at once, attacked a piece of cold beef; but, after each peck, he saw their heads raised above the edge, as if to guard against the least appearance of danger. After picking until they were tired or satisfied, they left the basket, and perched directly over his fire, but out of the direction of the smoke. There they sat enjoying themselves, and ruffling their feathers, to allow the warmth more easy access to their skin, until he began his dinner, when they alighted near him, and, in the most plaintive tones, seemed to solicit a portion."

"Often," continues our author, "have I watched the busy Chickadees as they proceeded from tree to tree and from branch to branch, whether by the roadside or in the interior of the forest. The light rustling sound of their concave wings would intimate their approach as well as their retreat, as gaily one after another they passed onwards from one spot to another, chattering, peeping everywhere, and determined as it were not to suffer a chink to pass without inspection. Now hanging back downwards at the extremity of a twig, its feet almost up to its bill, one would peck at a berry or a seed, until it had devoured it, or it had fallen to the ground. Should the latter be the case, the busy bird would at once fly down and hammer at the fruit. To the Black-cap Titmouse the breaking of a hazel-nut is quite a pleasure, and I have repeatedly seen the feat accomplished, not only by a bird in its natural state, but by one kept in confinement. Courageous, and at times exceedingly tyrannical, it will attack young birds, break their skulls, and feed upon their flesh, as I have more than once witnessed.

"The Chickadee feeds on insects, their larvæ and eggs, as well as on every sort of small fruit or berries, including grapes, acorns, and the seeds of various pines. I have seen it eat the seeds of the sunflower, the pokeberry and pears, as well as flesh of all kinds. Indeed, it may truly be called omnivorous. Often you may see them perched, as it were, upon their food, and holding it beneath their feet while pecking it.

"The nest of this species, whether it be placed in the hole of a Woodpecker or Squirrel, or in a place dug by itself, is seldom found at a height exceeding ten feet. Most of those which I have seen were in low, broken, or hollowed stumps, a few feet high. The materials of which it is composed vary in different districts, but are generally the hair of quadrupeds in considerable quantity, and disposed in the shape of a loose bag or purse, as in most other species which do not hang their nests outside." The eggs rarely exceed eight in number; they are five-eighths of an inch long by three-eighths and three-quarters, rather pointed at the smaller end with minute reddish dots and markings. The first brood are laid from the middle of April to that of May, the second two months later. "The flight of this species," says Audubon, "like that of all American Titmice, is short, fluttering generally from tree to tree, and is accompanied with a murmuring sound, produced by the concavity of the wings. It is seldom seen on the ground, unless when it has followed a fruit that has fallen, or when searching for materials for its nest. It usually roosts in its nest during winter, and in summer amid the close foliage of firs or evergreens. In winter indeed, as well as in autumn, it is seen near the farmhouses, and even in villages and towns, busily seeking for food among the trees."

"On seeing a cat, or other object of natural antipathy," says Mr. Nuttall, "the Chickadee, like the peevish Jay, scolds in a loud, angry, and hoarse note, ''tshe! daigh, daigh, daigh!' Among the other notes of this species I have heard a call like ''tshe-de-jay! 'tshe-de-jay!' the two first syllables being a feeble chirp, with the *jay* strongly pronounced. The only note of this bird which can be called a song, is one which is frequently heard at intervals in the depths of the forest at times of day usually when all other birds are silent. We may then sometimes hear, in the midst of this solitude, two feeble, drawling, clearly whistled and rather melancholy notes, like 'Te dizzy!' and sometimes 'Ye perrit!' and occasionally, but rarely, in the same wiry, whistling, solemn tone, 'Phebe!' On fine days, about the commencement of October, I have heard the Chickadee sometimes for half an hour at a time, attempt a lively petulant warble, very different from his ordinary note. On these occasions he appears to flirt about, still hunting for his prey, in an ecstasy of delight and vigour. But, after awhile, the usual drawling note again occurs."

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